

External Service Yard (Fortel)

Contents

Fortel Graham Kavanagh graham@fortel.co.uk Wednesfield Road Willenhall Wolverhampton WV13 1AE 01902 603 409



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Certificates/Warranties/Guarantees

Cleaning and Maintenance Regimes

Data Sheets



Scope of Works





Unit 1 Diversity Drive, Walsall WS2 8DS T: 01902 603 409 F: 01902 605 144

OPERATIONS AND MAINTENANCE MANUAL, INTERNAL UPPER FLOOR CONCRETE SLAB PROJECT CALDER PARK WAKELFIELD WINVIC

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Fortel Contact Details
Work Description
Design
Floor Maintenance
Hazards and Dangers
Materials & Suppliers
COSHH
Material Testing

1 CONTACT DETAILS

Contracts Manager – George Singh mobile no. 07756505815

2 WORK DESCRIPTION

150mm thick C35N/mm² concrete incorporating A393 fabric reinforcement laid on steel decking. The surface received an easy-float finish, cured with one coat Adocure WW curing compound.

3 <u>DESIGN</u> By others



Certificates/Warranties/Guarantees







TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	r	Client Addre	Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					Order Number: 031/Winvic	
Name of Project:			Position of (Position of Concrete in Project:			ete Supplier:	Report Reference:		
c/o Winvic, Peel Ave	2 7UA	External Floo	External Floor Slab							
Specification & Consistency of Concrete:		Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425	GT425/ 56235-3		
C:32/40; 20mmAGG	G; S3		150mm	-	13.01.2022	14:20	13.01.2022			
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments	
84591988	916-1p	20.01.2022	7	2400	100	291.4	29.1	40		
	916-2	10.02.2022	28	2440	100	418.3	41.8	40		
	916-3		SP						Disposed	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

Date of Issue: 14 February 2022

GT Certification Ltd

George Henry Road, Great Bridge, Tipton

Tel +44 (0) 121 522 3957

West Midlands.

DY4 7BU

Unit A10, Link One Industrial Park,

Email: sales@gtcertification.com

Certified that curing in the laboratory and testing carried out in accordance with BS EN 12390-2 and 12390-7 and 12390-3. This test report shall not be reproduced, except in full, without the written approval of GT Certification Limited. These results relate only to the items tested.

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Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:		
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floc	External Floor Slab, Road Slab						
Specification & Consistency of Concrete:		Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	G1425	/ 55603-1		
C:32/40; 20mm Agg	g; S3		160mm	-	05.11.201	13.55	05.11.2021			
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments	
2086127717	23-1b	12.11.2021	7	2320	100	347.1	34.7	40		
	23-2	03.12.2021	28	2300	100	482.1	48.2	40		
	23-3		SP						Disposed	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

Date of Issue: 06 December 2021

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Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:	
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floo	External Floor Slab, Road Slab					
Specification & Consistency of Concrete:		Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	G1425	/ 55603-2	
C:32/40; 20mm Agg	g; S3		170mm	-	05.11.201	14.45	05.11.2021		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments
2086128143	24-1b	12.11.2021	7	2350	100	344.2	34.4	40	
	24-2	24.12.2021	28	2340	100	498.1	49.8	40	
	24-3		SP						Disposed

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

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Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:	
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floo	External Floor Slab, Road Slab					
Specification & Consistency of Concrete:		Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	G1425	/ 55603-2	
C:32/40; 20mm Agg	g; S3		170mm	-	05.11.201	14.45	05.11.2021		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments
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	24-2	24.12.2021	28	2340	100	498.1	49.8	40	
	24-3		SP						Disposed

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

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Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:		
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floo	External Floor Slab						
Specification & Con	sistency of Concrete	9:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	G1425	/ 55603-3	
C:32/40; 20mm Agg	; Add: AER 46/ P190	; \$3	130mm	-	16.11.201	09.00	17.11.2021			
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments	
2086182806	972-1y	23.11.2021	7	2270	100	326.6	32.7	40		
	972-2	30.11.2021	14	2290	100	404.7	40.5	40		
	972-3	14.12.2021	28	2280	100	436.1	43.6	40		
	972-4		sp						Disposed	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

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Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:		
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floo	External Floor Slab						
Specification & Con	sistency of Concrete	9:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	G1425	/ 55603-3	
C:32/40; 20mm Agg	; Add: AER 46/ P190	; \$3	130mm	-	16.11.201	09.00	17.11.2021			
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments	
2086182806	972-1y	23.11.2021	7	2270	100	326.6	32.7	40		
	972-2	30.11.2021	14	2290	100	404.7	40.5	40		
	972-3	14.12.2021	28	2280	100	436.1	43.6	40		
	972-4		sp						Disposed	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

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For the attention of	: Contracts Manager	ſ				-					
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:			
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floo	External Floor Slab							
Specification & Con	sistency of Concrete	:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	G1425	/ 55603-4		
C:32/40; 20mm Agg	; Add: AER 46/ P190	; \$3	140mm	-	16.11.201	10.40	17.11.2021				
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm²)	Comments		
2086184089	973-1y	23.11.2021	7	2290	100	321.4	32.1	40			
	973-2	30.11.2021	14	2300	100	395.2	39.5	40			
	973-3	14.12.2021	28	2280	100	433.8	43.4	40			
	973-4		sp						Disposed		

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

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For the attention of	: Contracts Manager	ſ				-					
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:			
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floo	External Floor Slab							
Specification & Con	sistency of Concrete	:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	G1425	/ 55603-4		
C:32/40; 20mm Agg	; Add: AER 46/ P190	; \$3	140mm	-	16.11.201	10.40	17.11.2021				
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm²)	Comments		
2086184089	973-1y	23.11.2021	7	2290	100	321.4	32.1	40			
	973-2	30.11.2021	14	2300	100	395.2	39.5	40			
	973-3	14.12.2021	28	2280	100	433.8	43.4	40			
	973-4		sp						Disposed		

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

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Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:	
c/o Winvic, Peel Ave	2 7UA	External Floo	or Slab, Road Slab		Hanson				
Specification & Con	sistency of Concrete	9:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425	/ 55603-5
C:32/40; 20mm Agg	; Add: 50L; S3		160mm	-	18.11.201	12.00	18.11.2021		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm²)	Specified Strength at 28 days (N/mm ²)	Comments
2086201625	47-1b	25.11.2021	7	2290	100	336.1	33.6	40	
	47-2	02.12.2021	14	2310	100	402.1	40.2	40	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

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Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:	
c/o Winvic, Peel Ave	2 7UA	External Floo	or Slab, Road Slab		Hanson				
Specification & Con	sistency of Concrete	9:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425	/ 55603-5
C:32/40; 20mm Agg	; Add: 50L; S3		160mm	-	18.11.201	12.00	18.11.2021		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm²)	Specified Strength at 28 days (N/mm ²)	Comments
2086201625	47-1b	25.11.2021	7	2290	100	336.1	33.6	40	
	47-2	02.12.2021	14	2310	100	402.1	40.2	40	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

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Name of Project:	5		Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:	
c/o Winvic, Peel Ave	2 7UA	External Floo	External Floor Slab, Road Slab						
Specification & Con	sistency of Concrete	9:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425	/ 55603-6
C:32/40; 20mm Agg	; Add: 50L; S3		110mm	-	18.11.201	13.15	18.11.2021		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments
2086202694	48-1b	25.11.2021	7	2320	100	327.4	32.7	40	
	48-2	02.12.2021	14	2320	100	400.1	40.0	40	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
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Name of Project:	5		Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:	
c/o Winvic, Peel Ave	2 7UA	External Floo	External Floor Slab, Road Slab						
Specification & Con	sistency of Concrete	9:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425	/ 55603-6
C:32/40; 20mm Agg	; Add: 50L; S3		110mm	-	18.11.201	13.15	18.11.2021		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments
2086202694	48-1b	25.11.2021	7	2320	100	327.4	32.7	40	
	48-2	02.12.2021	14	2320	100	400.1	40.0	40	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

Date of Issue: 07 December 2021

Certified that curing in the laboratory and testing carried out in accordance with BS EN 12390-2 and 12390-7 and 12390-3. This test report shall not be reproduced, except in full, without the written approval of GT Certification Limited. These results relate only to the items tested.

Page 1 of 1.

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TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manager	ces Ltd. Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					Order Number: 031/Winvic - George		
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:	
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floc	External Floor Slab					
Specification & Consistency of Concrete:		Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425/ 55955-1		
C:32/40;20mmAGG	;ADD:AEA/WRA;S3		130mm	-	06.12.2021	11.30	07.12.2021		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments
23902	945-1b	13.12.2021	7	2290	100	350.1	35.0	40	
	945-2	20.12.2021	14	2300	100	384.2	38.4	40	
	945-3	03.01.2022	28	2310	100	483.1	48.3	40	
	945-4		SP						Disposed

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions		Concrete Failure:	Normal

Date of Issue: 10 January 2022

GT Certification Ltd

George Henry Road, Great Bridge, Tipton

Tel +44 (0) 121 522 3957

West Midlands.

DY4 7BU

Unit A10, Link One Industrial Park,

Email: sales@gtcertification.com

Certified that curing in the laboratory and testing carried out in accordance with BS EN 12390-2 and 12390-7 and 12390-3. This test report shall not be reproduced, except in full, without the written approval of GT Certification Limited. These results relate only to the items tested.

Page 1 of 1.

Authorised By.





TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. : Contracts Manager		Client Addre	Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					/Winvic - George
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:	
c/o Winvic, Peel Ave	2 7UA	External Floo	External Floor Slab						
Specification & Con	sistency of Concrete	::	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425	/ 55955-1
C:32/40;20mmAGG	ADD:AEA/WRA;S3		130mm	-	06.12.2021	11.30	07.12.2021		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments
23902	945-1b	13.12.2021	7	2290	100	350.1	35.0	40	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

Date of Issue: 14 December 2021

GT Certification Ltd

George Henry Road, Great Bridge, Tipton West Midlands.

Tel +44 (0) 121 522 3957

DY4 7BU

Unit A10, Link One Industrial Park,

Email: sales@gtcertification.com

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GT Certification Ltd Unit A10, Link One Industrial Park, George Henry Road, Great Bridge, Tipton West Midlands. DY4 7BU Tel +44 (0) 121 522 3957 Email: sales@gtcertification.com

TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	r	Client Addre	Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					Order Number: 031/Winvic - George	
Name of Project:			Position of 0	Position of Concrete in Project:			ete Supplier:	Report Reference:		
c/o Winvic, Peel Ave	2 7UA	External Floo	External Floor Slab							
Specification & Con	sistency of Concrete	9:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425	/ 55955-1	
C:32/40;20mmAGG	;ADD:AEA/WRA;S3		130mm	-	06.12.2021	11.30	07.12.2021			
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm²)	Comments	
23902	945-1b	13.12.2021	7	2290	100	350.1	35.0	40		
	945-2	20.12.2021	14	2300	100	384.2	38.4	40		

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions		Concrete Failure:	Normal

Date of Issue: 21 December 2021

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TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manager		Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					Order Number: 031/Winvic - George	
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:	
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floc	External Floor Slab					
Specification & Consistency of Concrete:		Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425	/ 55955-2	
C:32/40;20mmAGG	;ADD:AEA/WRA;S3		130mm	-	06.12.2021	09.20	07.12.2021		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments
23894	946-1B	13.12.2021	7	2310	100	347.9	34.8	40	
	946-2	20.12.2021	14	2310	100	381.7	38.2	40	
	946-3	03.01.2022	28	2320	100	489.9	49.0	40	
	946-4		SP						Disposed

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions		Concrete Failure:	Normal

Date of Issue: 10 January 2022

GT Certification Ltd

George Henry Road, Great Bridge, Tipton

Tel +44 (0) 121 522 3957

West Midlands.

DY4 7BU

Unit A10, Link One Industrial Park,

Email: sales@gtcertification.com

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TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	r	Client Addre	Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					Order Number: 031/Winvic - George	
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:		
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floo	External Floor Slab						
Specification & Consistency of Concrete: M		Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425/ 55955-2			
C:32/40;20mmAGG	;ADD:AEA/WRA;S3		130mm	-	06.12.2021	09.20	07.12.2021			
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments	
23894	946-10	13.12.2021	7	2310	100	347.9	34.8	40		

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

Date of Issue: 14 December 2021

GT Certification Ltd

George Henry Road, Great Bridge, Tipton

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GT Certification Ltd

Unit A10, Link One Industrial Park,

TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	r	Client Addr	ess: 33-35 Wedne	Order Number: 031/Winvic - George				
Name of Project:			Position of	Position of Concrete in Project:			ete Supplier:	Report Reference:	
c/o Winvic, Peel Ave	2 7UA	External Flo	External Floor Slab						
Specification & Con	Specification & Consistency of Concrete:		Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425	/ 55955-2
C:32/40;20mmAGG	;ADD:AEA/WRA;S3		130mm	-	06.12.2021	09.20	07.12.2021		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m ³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments
23894	946-10	13.12.2021	7	2310	100	347.9	34.8	40	
	946-2	20.12.2021	14	2310	100	381.7	38.2	40	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,,	Concrete Failure:	Normal

Date of Issue: 21 December 2021

Certified that curing in the laboratory and testing carried out in accordance with BS EN 12390-2 and 12390-7 and 12390-3. This test report shall not be reproduced, except in full, without the written approval of GT Certification Limited. These results relate only to the items tested.

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TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	r	Client Addre	Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					Order Number: 031/Winvic - George	
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:		
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floo	External Floor Slab						
Specification & Consistency of Concrete:		e:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	G1425	/ 55955-3	
C:32/40; 20mmAGG	i;S3		150mm	-	07.12.2021	09.05	08.12.2021	-		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments	
23926	355-1p	14.12.2021	7	2390	100	274.4	27.4	40		
	355-2	04.01.2022	28	2390	100	427.6	42.8	40		
	355-3		SP						Disposed	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

Date of Issue: 11 January 2022

GT Certification Ltd

George Henry Road, Great Bridge, Tipton West Midlands.

Tel +44 (0) 121 522 3957

DY4 7BU

Unit A10, Link One Industrial Park,

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TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	r	Client Addre	Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					/Winvic - George
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:	
c/o Winvic, Peel Ave	2 7UA	External Floo	External Floor Slab						
Specification & Con	Specification & Consistency of Concrete:		Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425	/ 55955-3
C:32/40; 20mmAGG	i;S3		150mm	-	07.12.2021	09.05	08.12.2021		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments
23926	355-1p	14.12.2021	7	2390	100	274.4	27.4	40	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

Date of Issue: 21 December 2021

GT Certification Ltd

George Henry Road, Great Bridge, Tipton West Midlands.

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TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	r	Client Addre	Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					Order Number: 031/Winvic - George	
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:		
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floo	External Floor Slab						
Specification & Consistency of Concrete:		e:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	G1425	GT425/ 55955-4	
C:32/40; 20mmAGG	i;S3		150mm	-	07.12.2021	11.20	08.12.2021			
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm²)	Specified Strength at 28 days (N/mm ²)	Comments	
23935	356-1p	14.12.2021	7	2390	100	268.4	26.8	40		
	356-2	04.01.2022	28	2400	100	424.8	42.5	40		
	356-3		SP						Disposed	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

Date of Issue: 11 January 2022

GT Certification Ltd

George Henry Road, Great Bridge, Tipton

Tel +44 (0) 121 522 3957

West Midlands.

DY4 7BU

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TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	r	Client Addre	Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					/Winvic - George	
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:		
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floo	External Floor Slab						
Specification & Consistency of Concrete:		9:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425	GT425/ 55955-4	
C:32/40; 20mmAGG	i;S3		150mm	-	07.12.2021	11.20	08.12.2021			
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm²)	Specified Strength at 28 days (N/mm ²)	Comments	
23935	356-1p	14.12.2021	7	2390	100	268.4	26.8	40		

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions		Concrete Failure:	Normal

Date of Issue: 21 December 2021

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TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel	Services Ltd.		Client Addre	Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					Order Number: 031/Winvic - George	
For the attention of	: Contracts Manage	r								
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:		
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floo	External Floor Slab						
Specification & Con	sistency of Concreto	e:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	G1425	/ 55955-5	
C:32/40; 20mmAGG	;\$3		150mm	-	07.12.2021	11.20	08.12.2021			
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments	
23952	668-1b	16.12.2021	7	2310	100	289.1	28.9	40		
	668-2	23.12.2021	14	2320	100	380.7	38.1	40		
	668-3	06.01.2022	28	2320	100	465.1	46.5	40		
	668-4		sp						Disposed	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions		Concrete Failure:	Normal

Date of Issue: 10 January 2022

GT Certification Ltd

George Henry Road, Great Bridge, Tipton West Midlands.

Tel +44 (0) 121 522 3957

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Unit A10, Link One Industrial Park,

Email: sales@gtcertification.com

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TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	r	Client Addre	Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					Order Number: 031/Winvic - George	
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:		
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floo	External Floor Slab						
Specification & Con	sistency of Concrete	2:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425/ 55955-5		
C:32/40; 20mmAGG	i;S3		150mm	-	07.12.2021	11.20	08.12.2021			
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments	
23952	668-1b	16.12.2021	7	2310	100	289.1	28.9	40		

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

Date of Issue: 21 December 2021

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Page 1 of 1.

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TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel Services Ltd.Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AEFor the attention of: Contracts Manager						WV13 1AE	Order Number: 031/Winvic - George		
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:	
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floo	External Floor Slab					
Specification & Consistency of Concrete:		Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425	/ 55955-6	
C:32/40; 20mmAGG	;\$3		150mm	-	09.12.2021	08.25	09.12.2021		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments
23955	669-1b	16.12.2021	7	2310	100	304.3	30.4	40	
	669-2	23.12.2021	14	2320	100	390.1	39.0	40	
	669-3	06.01.2022	28	2330	100	475.3	47.5	40	
	669-4		sp						Disposed

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions		Concrete Failure:	Normal

Date of Issue: 10 January 2022

GT Certification Ltd

George Henry Road, Great Bridge, Tipton West Midlands.

Tel +44 (0) 121 522 3957

DY4 7BU

Unit A10, Link One Industrial Park,

Email: sales@gtcertification.com

Certified that curing in the laboratory and testing carried out in accordance with BS EN 12390-2 and 12390-7 and 12390-3. This test report shall not be reproduced, except in full, without the written approval of GT Certification Limited. These results relate only to the items tested.

Page 1 of 1.

Gerthan Authorised By...





TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	r	Client Addre	Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					/Winvic - George
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:	
c/o Winvic, Peel Ave	2 7UA	External Floc	External Floor Slab						
Specification & Consistency of Concrete: M		Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425	/ 55955-6	
C:32/40; 20mmAGG	i;S3		150mm	-	09.12.2021	08.25	09.12.2021		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm²)	Specified Strength at 28 days (N/mm ²)	Comments
23955	669-1b	16.12.2021	7	2310	100	304.3	30.4	40	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

Date of Issue: 21 December 2021

GT Certification Ltd

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DY4 7BU

Unit A10, Link One Industrial Park,

Email: sales@gtcertification.com

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GT Certification Ltd

TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	r	Client Addre	Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					Order Number: 031/Winvic	
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:		
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floc	External Floor Slab			Aggregate Ind		/ /	
Specification & Consistency of Concrete: Me		Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	G1425	/ 56235-1		
C:40; MCC:NG; 20m	mAGG; W/C:NG; Ad	d:AEA; S3	130mm	-	10.01.2022	12:10	11.01.2022			
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments	
84568547	863-1p	17.01.2022	7	2360	100	342.1	34.2	40		
	863-2	24.01.2022	14	2340	100	397.0	39.7	40		
	863-3	07.02.2022	28	2370	100	490.1	49.0	40		
	863-4		SP						Disposed	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions		Concrete Failure:	Normal

Date of Issue: 08 February 2022

Certified that curing in the laboratory and testing carried out in accordance with BS EN 12390-2 and 12390-7 and 12390-3. This test report shall not be reproduced, except in full, without the written approval of GT Certification Limited. These results relate only to the items tested.

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GT Certification Ltd

TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	r	Client Addre	Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					/Winvic
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:	
c/o Winvic, Peel Ave	2 7UA	External Floc	External Floor Slab						
Specification & Consistency of Concrete: Mo			Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	G1425	/ 56235-1
C:40; MCC:NG; 20m	mAGG; W/C:NG; Ad	d:AEA; S3	130mm	-	10.01.2022	12:10	11.01.2022		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments
84568547	863-1p	17.01.2022	7	2360	100	342.1	34.2	40	
	863-2	24.01.2022	14	2340	100	397.0	39.7	40	

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions		Concrete Failure:	Normal

Date of Issue: 25 January 2022

Certified that curing in the laboratory and testing carried out in accordance with BS EN 12390-2 and 12390-7 and 12390-3. This test report shall not be reproduced, except in full, without the written approval of GT Certification Limited. These results relate only to the items tested.

Page 1 of 1.

Gert Authorised By...





TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	ne: Fortel Services Ltd. Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE Optimization of: Contracts Manager					Order Number: 031/Winvic				
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:		
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floc	External Floor Slab			Aggregate Ind			
Specification & Consistency of Concrete: Mea		Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425/ 56235-1			
C:40; MCC:NG; 20m	mAGG; W/C:NG; Ad	d:AEA; S3	130mm	-	10.01.2022	12:10	11.01.2022			
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm²)	Comments	
84568547	863-1p	17.01.2022	7	2360	100	342.1	34.2	40		

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

Date of Issue: 19 January 2022

GT Certification Ltd

George Henry Road, Great Bridge, Tipton

Tel +44 (0) 121 522 3957

West Midlands.

DY4 7BU

Unit A10, Link One Industrial Park,

Email: sales@gtcertification.com

Certified that curing in the laboratory and testing carried out in accordance with BS EN 12390-2 and 12390-7 and 12390-3. This test report shall not be reproduced, except in full, without the written approval of GT Certification Limited. These results relate only to the items tested.

Page 1 of 1.

Authorised By.





TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manager		Client Address: 33-35 Wednesfield Road, Willenhall, Wolverhampton, WV13 1AE					Order Number: 031/Winvic	
Name of Project:			Position of C	Position of Concrete in Project:			ete Supplier:	Report Reference:	
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floc	External Floor Slab					
Specification & Consistency of Concrete: N		Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425/ 56235-2		
C:40; MCC:NG; 20m	mAGG; W/C:NG; Ad	d:AEA; S3	140mm	-	10.01.2022	12:50	11.01.2022		
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments
84568551	864-1p	17.01.2022	7	2360	100	344.1	34.4	40	
	864-2	24.01.2022	14	2370	100	405.2	40.5	40	
	864-3	07.02.2022	28	2380	100	510.3	51.0	40	
	864-4		SP						Disposed

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

Date of Issue: 08 February 2022

GT Certification Ltd

George Henry Road, Great Bridge, Tipton

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West Midlands.

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Unit A10, Link One Industrial Park,

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Page 1 of 1.

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TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	r	Client Addre	ss: 33-35 Wednes	Order Number: 031/Winvic						
Name of Project:			Position of C	Position of Concrete in Project:			Name of Concrete Supplier:		Report Reference:	
c/o Winvic, Peel Avenue, Wakefield WF2 7UA			External Floc	External Floor Slab			Aggregate Ind			
Specification & Consistency of Concrete: Me			Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	G1425/ 56235-2		
C:40; MCC:NG; 20mmAGG; W/C:NG; Add:AEA; S3			140mm	-	10.01.2022	12:50	11.01.2022			
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm²)	Comments	
84568551	864-1p	17.01.2022	7	2360	100	344.1	34.4	40		
	864-2	24.01.2022	14	2370	100	405.2	40.5	40		

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes	
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd	
Cube Moisture Condition at Testing:	Saturated 0.4 to 0.8 N/mm ² /sec		Concrete Appearance:	Normal	
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal	

Date of Issue: 25 January 2022

GT Certification Ltd

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TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	WV13 1AE	Order Number: 031/Winvic								
Name of Project:			Position of C	Concrete in Projec	:t:	Name of Concr	ete Supplier:	Report Reference:		
c/o Winvic, Peel Ave	enue, Wakefield WF2	2 7UA	External Floo	or Slab		Aggregate Ind		- GT425/ 56235-2		
Specification & Con	sistency of Concrete	e:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:			
C:40; MCC:NG; 20m	mAGG; W/C:NG; Ad	3; W/C:NG; Add:AEA; S3 140mm - 10.01.2022 12:50 11.01.2022								
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments	
84568551	864-1p	17.01.2022	7	2360	100	344.1	34.4	40		

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

Date of Issue: 19 January 2022

GT Certification Ltd

George Henry Road, Great Bridge, Tipton

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Page 1 of 1.

Authorised By.

G. C. Thompson (Managing Director)





TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	r	Client Addre	sfield Road, Willenhall, N	Wolverhampton,	WV13 1AE	Order Number: 031/Winvic			
Name of Project:			Position of C	Concrete in Projec	:t:	Name of Concr	ete Supplier:	Report Reference:		
c/o Winvic, Peel Ave	enue, Wakefield WF2	2 7UA	External Floc	or Slab		Aggregate Ind		GT425/ 56235-3		
Specification & Con	sistency of Concrete	9:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:			
C:32/40; 20mmAGG	G; S3		150mm - 13.01.2022 14:20 13.01.2022							
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments	
84591988	916-1p	20.01.2022	7	2400	100	291.4	29.1	40		

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

Date of Issue: 21 January 2022

GT Certification Ltd

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Gerthan Authorised Bv..

G. C. Thompson (Managing Director)





TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	WV13 1AE	Order Number: 031	/Winvic						
Name of Project:			Position of C	Concrete in Projec	:t:	Name of Concr	ete Supplier:	Report Reference:		
c/o Winvic, Peel Ave	enue, Wakefield WF2	2 7UA	External Floc	or Slab		Aggregate Ind		- GT425/ 56235-4		
Specification & Con	sistency of Concrete	2:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:			
C:32/40; 20mmAGG	G; S3		150mm - 13.01.2022 14:50 13.01.2022							
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm ²)	Comments	
84591990	917-1g	20.01.2022	7	2450	100	290.6	29.1	40		

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions	.,,	Concrete Failure:	Normal

Date of Issue: 21 January 2022

GT Certification Ltd

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Page 1 of 1.

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G. C. Thompson (Managing Director)





TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	r	Client Addre	ess: 33-35 Wedne	Order Number: 031	/WINVIC				
Name of Project:			Position of C	Concrete in Projec	ct:	Name of Concr	ete Supplier:	Report Reference:		
c/o Winvic, Peel Ave	enue, Wakefield WF2	2 7UA	External Floo	External Floor Slab			stries			
Specification & Con	sistency of Concrete	9:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:	GT425/ 56507-3		
C:32/40; 20mmAGG	i; S3		140mm - 17.02.2022 10.30 18.02.2022							
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm²)	Comments	
84816807	744-1w	24.02.2022	7	2390	100	329.4	32.9	40		

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions		Concrete Failure:	Satisfactfory

Date of Issue: 28 February 2022

GT Certification Ltd

George Henry Road, Great Bridge, Tipton

Tel +44 (0) 121 522 3957

West Midlands.

DY4 7BU

Unit A10, Link One Industrial Park,

Email: sales@gtcertification.com

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Page 1 of 1.

Authorised By. G. C. Thompson (Managing Director)





TEST CERTIFICATE - CONCRETE CUBES

Tested to BS EN 12390-3: 2019

Client Name: Fortel For the attention of	Services Ltd. f: Contracts Manage	r	Client Addre	ess: 33-35 Wedne	Order Number: 031/WINVIC					
Name of Project:			Position of (Concrete in Projec	ct:	Name of Concr	ete Supplier:	Report Reference:		
c/o Winvic, Peel Ave	enue, Wakefield WF	2 7UA	External Flo	or Slab		Aggregate Indu	stries	- GT425/ 56507-4		
Specification & Con	sistency of Concrete	2:	Measured Slump:	Air Content:	Date Made:	Time Made:	Date of Receipt:			
C:32/40; 20mmAGG	i; S3		140mm - 17.02.2022 11.05 18.02.2022							
Client Cube Reference.	GT Cube Reference	Test Date	Test Age (Days)	Density (saturated) (kg/m³)	Designated Sizes (mm)	Max. Load (kN)	Comp. Strength (N/mm ²)	Specified Strength at 28 days (N/mm²)	Comments	
84817158	745-1w	24.02.2022	7	2400	100	332.1	33.2	40		

Condition of Cubes when Received:	Wet	Rate of	Making Certificate Available:	Yes
Laboratory Curing Range:	18°-22°C	Loading	Cube Made By:	GT Certification Ltd
Cube Moisture Condition at Testing:	Saturated	0.4 to 0.8 N/mm ² /sec	Concrete Appearance:	Normal
Volume determined by:	Dimensions		Concrete Failure:	Satisfactfory

Date of Issue: 28 February 2022

GT Certification Ltd

George Henry Road, Great Bridge, Tipton

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Unit A10, Link One Industrial Park,

Email: sales@gtcertification.com

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Page 1 of 1.

Authorised By. G. C. Thompson (Managing Director)

CERTIFICATE OF APPROVAL



Product Conformity Certification

This is to certify that CELSA Manufacturing (UK) Ltd

at its establishment at Lichfield

has satisfied the Authority that it operates a quality management system that complies with the requirements of BS EN ISO 9001 and the relevant CARES Quality and Operations Assessment Schedules. Where appropriate, and as listed below, it has further satisfied the Authority that it manufactures and/or supplies products that conform with the stated product standards and is entitled to use the CARES marks on its products using the processes and procedures registered with the Authority.

Scope of certification: BS4449:2005 grade B500A coil in the size range 6 to 12mm cold rolled BS4449:2005 grade B500B coil in the size range 10 to 16mm cold rolled BS 4449 2005 B500B Decoiled Bar 10 to 16mm BS4482:1985 BS4483:1998 and BS4483:2005

This certificate remains the property of the Authority and is issued subject to the Regulations of the Authority. This certificate is uncontrolled when printed. To check the validity of this certificate please visit www.ukcares.com or contact us on +44 1732 450000.

CERTIFICATE NUMBERFIRST APPROVALISSUE DATEEXPIRY DATE871001June 198701 January 202031 December 2020

SIGNED FOR UK CERTIFICATION AUTHORITY FOR REINFORCING STEELS

Lee Bankley

Lee Brankley, Chief Executive Officer UKAS PRODUCT CERTIFICATION

The use of the Accreditation Mark indicates accreditation in respect of those activities covered by the accreditation certificate number 002. UK Certification Authority for Reinforcing Steels, Pembroke House, 21 Pembroke Road, Sevenoaks, Kent, TN13 1XR, UK. A Company Limited by Guarantee. Registered in England No. 1762448.

Cert. Ref: AIIC112010 60901 56

CERTIFICATE OF APPROVAL



Product Conformity Certification

This is to certify that CELSA Manufacturing (UK) Ltd

at its establishment at

Lichfield

has satisfied the Authority that it operates a quality management system that complies with the requirements of BS EN ISO 9001 and the relevant CARES Quality and Operations Assessment Schedules. Where appropriate, and as listed below, it has further satisfied the Authority that it manufactures and/or supplies products that conform with the stated product standards and is entitled to use the CARES marks on its products using the processes and procedures registered with the Authority.

Scope of certification:

BS4449:2005 grade B500A coil in the size range 6 to 12mm cold rolled BS4449:2005 grade B500B coil in the size range 10 to 16mm cold rolled BS 4449 2005 B500B Decoiled Bar 10 to 16mm BS4482:1985 BS4483:1998 and BS4483:2005

This certificate remains the property of the Authority and is issued subject to the Regulations of the Authority. This certificate is uncontrolled when printed. To check the validity of this certificate please visit www.ukcares.com or contact us on +44 1732 450000.

CERTIFICATE NUMBERFIRST APPROVALISSUE DATEEXPIRY DATE871001June 198701 January 202031 December 2020

SIGNED FOR UK CERTIFICATION AUTHORITY FOR REINFORCING STEELS

Lee Backley

Lee Brankley, Chief Executive Officer



The use of the Accreditation Mark indicates accreditation in respect of those activities covered by the accreditation certificate number 002. UK Certification Authority for Reinforcing Steels, Pembroke House, 21 Pembroke Road, Sevenoaks, Kent, TN13 1XR, UK A Company Limited by Guarantee. Registered in England No. 1762448.

Cert. Ref: AllC112010 60901 56

United Kingdom Accreditation Service

ACCREDITATION CERTIFICATE



TESTING LABORATORY hlo. 247B

GT Certification Co Ltd

is accredited in accordance with the recognised International Standard ISO/IEC 17025:2005 General Requirements for the competence of testing and calibration laboratories

Thie accreditation demonstrates technical competence for a defined scope as detailed in and at the locations epecified in Ifie schedule to thiB Wrtificate. and the operation of a laboratory quality management System (refer joint ISO-ILAC-IAF Communique dated January 2009).

The schedule to this certificate is an essential accreditation document and from time to time may be revised and reissued by the United Kingdom Accreditation Service. The most recent issue of the schedula of accreditation, which boars the same accreditation number as this certificate, is available from the UKAS website

This accreditation is subject to continuing conformity with United Kingdom Accreditation Service requirements. The absence of a schedule on the UKs website indicates that the accreditation is no longer in force.

Accreditation Menag

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InItIal Accreditation date 04 February 2002

This certIfIcate Iseued on 25 February 2013

U AS is appointed gsthe sod national a edita\ion b0dy foy tha UK by The Accreditaton PteguTations 2009 (SI No 3155/2009I and oceretes und6F 4 Memorendum of Unde T+: Añinn {MOU} \Ullh thg Department for Busineas, TnnovaTion and Gkille (BIG).

United Kingdom Accreditation Service

ACCREDITATION CERTIFICATE



TESTING LABORATORY No. 2478

GT Certification Co Ltd

is accredited in accordance with the recognised International Standard ISO/IEC 17025:2005 General Requirements for the competence of testing and calibration laboratories.

This accreditation demonstrates technical competence for a defined scope as detailed in and at the locations specified in the schedule to this certificate, and the operation of a laboratory quality management system (refer joint ISO-ILAC-IAF Communiqué dated January 2009).

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Accreditation Manager, United Kingdom Accreditation Service

Initial Accreditation date 04 February 2002 This certificate issued on 25 February 2013

UKAS is appointed as the sole national accreditation body for the UK by The Accreditation Regulations 2009 (SI No 3155/2009) and operates under a Memorandum of Understanding (MoU) with the Department for Business, Innovation and Skills (BIS).



Cleaning and Maintenance Regimes





Cleaning and Maintenance Regimes

This Maintenance and Cleaning Maintenance is to be followed from PC date year on year to ensure all plant and equipment is kept within warranty.

Please keep a log of these inspections so that records can be checked should an issue arise.

Code; ✓Blue – Recommended ✓ Red – To Maintain Warranty

Item	Daily	Weekly	Monthly	3 Months	6 Months	9 Months	Annually	5 Yearly	Certificates	Regime
Surface	~									Hand sweep any debris from surface
Surface			✓							Clean Area with a Road sweeper
Joints				\checkmark						Inspect joints for damage & replace any joint sealant if necessary
Spillages										Absorb and remove immediately





Cleaning and Maintenance Regimes

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Code; ✓Blue – Recommended ✓ Red – To Maintain Warranty

Item	Daily	Weekly	Monthly	3 Months	6 Months	9 Months	Annually	5 Yearly	Certificates	Regime
Surface	~									Hand sweep any debris from surface
Surface		✓								Clean Area with a mechanical scrubber drier
General inspection of trafficked areas				~						Inspect joints for damage & replace any joint sealant if necessary. Repair any surface damage
Spillages										Absorb and remove immediately
Thorough floor clean								~		





Unit 1 Diversity Drive, Walsall WS2 8DS T: 01902 603 409 F: 01902 605 144

4 FLOOR MAINTENANCE (Uncovered Areas)

<u>Cleaning</u>

Regular cleaning is essential to stop dust and dirt building up, as increased surface wear or susceptibility to slips can result if a floor is not clean and dry. Frequency of cleaning will largely depend on the type of contamination. For maximum effectiveness the floor should be cleaned with a mechanical vacuum scrubber drier at least once per week.

Care should be taken when using cleaning material especially if used in the wrong concentration, giving rise to etching or wear.

<u>Spillages</u>

These should be wiped up or absorbed and removed as quickly as possible. Once removed the floor should be cleaned thoroughly.

Joint Inspection

Joints should be regularly inspected for signs of wear and damage. Any arris damage that has occurred should be quickly repaired as deterioration will accelerate once it has started. Any defective joint sealant in trafficked areas should be replaced.

Inspection and Action Schedule

The following guidelines are recommended for inspection and treatment.

Daily:

- Cleaning regime to remove dust, dirt and debris.
- Use floor scrubber or vacuum scrubber dryer.



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Every 3 months:

General and visual inspection of trafficked areas.

Repair any spalling or raveling of joint edges and replace joint sealant (as required)

Every 12 months:

- **•** Full inspection of the floors condition.
- **Replace sealant in floor joints if de-bonded or split due to movement.**

Every 5 years:

■ Thoroughly clean the floor.

5 HAZARDS AND DANGERS

<u>Spillages</u>

These should be wiped up or absorbed and removed as quickly as possible. Once removed the affected area should be cleaned thoroughly.

6 MATERIALS AND SUPPLIERS

<u>Concrete</u> C35N/mm² Supplier: Hanson Telephone: 0330 123 4628

<u>Polythene</u>

1200-gauge Black BBA Supplier: Pre con Products Ltd., Unit B, General Castle Way, Rougham Industrial Estate, Rougham, Nr Bury St Edmunds, Suffolk, IP30 9ND. Telephone: 0844 800 2464

Data Sheets





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<u>Fabric</u> A393 Supplier: ROM Limited, Eastern Avenue, Trent Valley, Lichfield, WS13 6RN. Telephone: 0870 011 2883

<u>Curing Agent</u> Adocure WW Supplier: Ado-mast Building Chemicals Limited, Lea Road Trading Estate, Waltham Abbey, Essex, EN9 1AE. Telephone: 01992 710684

7 <u>COSHH, TECHNICAL DATA & CARES CERTIFICATES</u> <u>COSHH</u>

- i) Concrete
- ii) Polythene
- iii) Adocure WW

<u>Technical Data</u>

- i) Polythene
- ii) Adocure WW

Cares Certificates

i) Fabric

8 <u>Material Testing</u>

Concrete Test Cubes

GT Certification Ltd., Unit A10, Link One Industrial Park, George Henry Road, Great Bridge Road, Great Bridge, Tipton, West Midlands, DY4 7BU. Telephone: 0121 522 3957



SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING Product name: ADOCURE WW/WWT Synonyms: Proprietory concrete curing aid Company name: Adomast Manufacturing Ltd Engine Lane, Shafton, Barnsley, S72 8SP Tel: 01226 70786

2. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous ingredients: SODIUM SILICATE 10-30% EINECS: 229-912-9 CAS: 1344-09-8 [Xi] R38; [Xi] R41 3. HAZARDS IDENTIFICATION

Main hazards: Irritating to skin. Risk of serious damage to eyes.

4. FIRST AID MEASURES (SYMPTOMS)

Skin contact: There may be irritation and redness at the site of contact.

Eye contact: There may be pain and redness. The eyes may water profusely. There may be severe

pain. The vision may become blurred. May cause permanent damage.

Ingestion: There may be soreness and redness of the mouth and throat. Nausea and stomach pain may occur.

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.

4. FIRST AID MEASURES (ACTION)

Skin contact: Remove all contaminated clothes and footwear immediately unless stuck to skin. Wash immediately with plenty of soap and water.

Eye contact: Bathe the eye with running water for 15 minutes. Transfer to hospital for specialist examination. Ingestion: Wash out mouth with water. Do not induce vomiting. If conscious, give half a litre of water to drink immediately. Consult a doctor.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so.

5. FIRE-FIGHTING MEASURES

Extinguishing media: Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

Exposure hazards: The material is not flammable therefore the media used is for the fire only. This product may give rise to hazardous fumes in a fire.

Protection of fire-fighters: Wear protective clothing to prevent contact with skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Mark out the contaminated area with signs and prevent access to unauthorised personnel. Do not attempt to take action without suitable protective clothing - see section 8 of SDS. Turn leaking containers leak-side up to prevent the escape of liquid.

Environmental precautions: Do not discharge into drains or rivers. Contain the spillage using bunding. Clean-up procedures: Absorb into dry earth or sand. Transfer to a closable, labelled salvage

container for disposal by an appropriate method.

7. HANDLING AND STORAGE

Handling requirements: Avoid direct contact with the substance. Avoid the formation or spread of mists in the air. Storage conditions: Store in cool, well ventilated area. Keep container tightly closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure there is sufficient ventilation of the area.

Respiratory protection: Respiratory protection is not normally required However suitable respiratory

equipment may need to be provided for those operations which generate vapour, mists or fumes and where

exposure cannot be adequately controlled by local exhaust ventilation or other means

Hand protection: Protective gloves.

Eye protection: Tightly fitting safety goggles. Ensure eye bath is to hand.

Skin protection: Protective clothing.



Adomast Manufacturing Ltd Engine Lane, Shafton, Barnsley, S72 8SP Tel: 01226 707863 www.adomast.co.uk



ABCD529 Page 2 of 2 Issued: 28/10/11 Revision No. 1

9. PHYSICAL AND CHEMICAL PROPERTIES State: Liquid Colour: Colourless Odour: Barely perceptible odour Evaporation rate: Slow Solubility in water: Soluble Viscosity: Non-viscous Relative density: 1.084 pH: 11-12 10. STABILITY AND REACTIVITY Stability: Stable under normal conditions. Conditions to avoid: Heat. Materials to avoid: Zinc. Acids. Aluminium. Fluorine vapours. Haz. decomp. products: This product may give rise to hazardous fumes in a fire. 11. TOXICOLOGICAL INFORMATION Hazardous ingredients: SODIUM SILICATE ORL RAT LD50 1280 mg/kg Chronic toxicity: Hazardous in case of contact with skin (irritant), very hazardous in case of eye contact (irritant). Routes of exposure: Refer to section 4 of SDS for routes of exposure and corresponding symptoms. 12. ECOLOGICAL INFORMATION Mobility: Readily absorbed into soil. Persistence and degradability: Not biodegradable. Bioaccumulative potential: No data available. Other adverse effects: Toxic to flora. The product is rated as moderately toxic to aquatic species. 13. DISPOSAL CONSIDERATIONS Disposal operations: Dispose of via an authorised person / licensed waste disposal contractor in accordance with local regulations. Waste code number: 16 03 04. Disposal of packaging: May be reused following decontamination. NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal. 14. TRANSPORT INFORMATION ADR / RID ADR Class: Not classified IMDG / IMO Class: Not classified IATA / ICAO Class: Not classified 15. REGULATORY INFORMATION Hazard symbols: Irritant. Risk phrases: R38: Irritating to skin. R41: Risk of serious damage to eyes. Safety phrases: S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S2: Keep out of the reach of children. S39: Wear eye / face protection. Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions. **16. OTHER INFORMATION** Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product



Adomast Manufacturing Ltd Engine Lane, Shafton, Barnsley, S72 8SP Tel: 01226 707863 www.adomast.co.uk



COSHH ASSESSMENT FOR ADOCURE WW

DESCRIPTION OF MATERIAL

COLOURLESS LIQUID WITH VERY LOW ODOUR

HAZARDS

IRRITATING TO THE SKIN. RISK OF SERIOUS DAMAGE TO EYES

HEALTH

THERE MAY BE IRRITATION IF CONTACT WITH SKIN CONTACT WITH EYES MAY CAUSE SEVERE PAIN AND PERMANENT DAMAGE INGESTION MAY CAUSE SORENESS AND REDNESS OF THE MOUTH AND THROAT. NAUSEA AND STOMACH PAIN MAY OCCUR. INHALATION MAY CAUSE IRRITATION OF THE THROAT AND TIGHTNESS IN THE CHEST

FIRST AID

SKIN CONTACT - WASH IMMEDIATELY WITH SOAP AND WATER. REMOVE ANY CONTAMINATED CLOTHING.

EYE CONTACT- WASH WITH COPIOUS AMOUNTS OF WATER. GO TO HOSPITAL FOR MEDICAL ATTENTION.

INGESTION - WASH OUT MOUTH WITH WATER. DO NOT INDUCE VOMITTING. IF CONSCIOUS, GIVE HALF LITRE OF WATER TO DRINK IMMEDIATELY. SEEK MEDICAL ATTENTION INHALATION - REMOVE PERSON FROM EXPOSURE

SPILLAGE

MARK OUT AREA CONTAMINATED AND PREVENT UNAUTHORISED ACCESS. CLEAN UP PROCEDURE - ABSORB WITH WITH DRY EARTH OR SAND. TRANSFER INTO CLOSABLE CONTAINER FOR CONTROLLED DISPOSAL. ENSURE OPERATIVES WEAR PROTECTIVE CLOTHING

CONTROL MEASURES

APPLY IN VENTILATED AREA. OPERATIVES TO WEAR RESPITORY PROTECTION, PROTECTIVE GLOVES, PROTECTIVE CLOTHING SUCH AS OVERALLS WITH NO EXPOSED SKIN

STORAGE AND APPLICATION

SUPPLIED IN 25 AND 200 LITRE CONTAINERS SHOULD BE KEPT IN A WELL VENTILATED AREA ON DRIP TRAYS LIQUID APPLIED TO CONCRETE SURFACE WITH A SUITABLE SPRAYER

MATERIAL SAFETY DATA SHEET (DIRECTIVE 91/155/EEC)

This data sheet has been produced to advise our customer regarding possible hazards with Flexible sheeting in recognition of our responsibility to health and safety at work act.

The use of our products does not entail any special hazard if they are handled according to normal good safety practices. Nevertheless, we would draw your attention to some specific information concerning their safe use. This information should not be construed as indicative of any new or unusual hazards that we have discovered, but rather that you should be properly informed of their characteristics and to discharge our duty as outlined in the Act.

1. Product and Company identification

Identification of Substances or Preparation:	Low density re-cycled Polyethylene.
Company Identification:	Frank Mercer & Sons Ltd Chequerbent Works, Manchester Road, Westhoughton. BL5 3JF
Emergency Contact Number	01942 841111 Jolene@toughsheet.co.uk

2. Composition/information on ingredients

100% re-cycled Low density Polyethylene (coloured Products include a maximum of 3% pigment)

Other additives may be included to achieve special properties depending on the end use of the product.

Coloured Sheeting will include a maximum of 3% Carbon Pigment.

There is no toxic element incorporated in the finished material and does not normally constitute a hazard.

PMF 38

3. Hazard Identification (Directive 67/548/EEC

None

4.	First Aid Measures	
a.	Skin Contact	No Special Measures
b.	Eye Contact	"
c.	Inhalation	"
d.	Ingestion	"

5. Fire Fighting Measures

Dry Powder
Water. Advice can be sought from local Fire authority
Gasses will be given off in a major fire situation, consult your local Fire authority.
Use self-contained breathing apparatus.

6. Accidental Release Measures

a. Personal Precautions	None
b. Environmental Precautions	None
c. Method of Cleaning up:	Not Applicable

7. Handling & Storage

a. Precautions during handling	There are no special precautions recommended for safe handling of flexible Polythene sheeting
b. Storage	If significant quantities of Polythene sheeting are stored, the local fire authorities should be advised of the fact in order that they are forewarned of the possible hazard.

8. Exposure Control/Personal Protection

a.	Exposure Control Limits	None
b.	Special Protective Measures	None

9. Physical & Chemical Properties

Physical State	Sheet Material
Odour	Faint
Decomposition Temperature	Begins at 160 degrees Cent. Decomposition is a function of time, high processing temperatures should not be applied for long periods. Above 200 degrees Cent decomposition occurs rapidly.
Flammability	will burn if it comes into direct contact with a naked flame or a radiant heat source such infrared heating element.
	Physical State Odour Decomposition Temperature

10.STABILITY & REACTIVITY

a. Thermal Decomposition	Decomposition will start at 160 degrees Cent.
b. Conditions to avoid	None
c. Materials to Avoid	None

11. Toxicological Information

a. Residual Monomer depolymerise	When heated the sheeting do not
b. Toxic Ingredients. However,	Does not constitute a toxic hazard.
	being made of totally recycled product it should not be used for directly wrapping food nor should sheet be used for children's playthings unless specifically formulated for this purpose.

12. Ecological Information

The product is not biologically decomposable. It degrades under prolonged ultraviolet exposure. It floats on water and is insoluble in water. No bioaccumulation known. The product is non toxic
The product is non toxic.

13. Disposal Consideration

a. Disposal of Product	Through normal trade re-cycling outlets
b. Disposal of Packaging	By re-cycling. We are an accredited Re-cycler with the Department of the Environment and can take all LDPE products back for re-cycling and re-use.

14. Transport Information

a.	No Special Precautions required	
b.	ADR	None
C.	UN Number	None

15. Regulatory Information

a. Risk Phrase	None
b. Safety Phrase	None
c. Classification Symbol	None

16. Other Information

a. Uses	Various
b. Processing Involving Heat	In operations such as HF Weldingor Vacuum Forming etc., excessive heat may give rise to evolution of plasticiser fumes, none of which are harmful or toxic.

c. Static Electricity	Build up of static electricity in rolls of Polythene film and sheeting may cause sparking when the material is earthed. In areas where this may be a potential hazard e.g. near flammable solvents, steps should be taken to eliminate safely the static charge and to prevent or minimise Subsequent recharging during further processing.
d. REACH	The data contained in this Material Safety Data Sheet has been prepared in accordance with formatting described in the REACH Regulation (EC) No 1907/2006, and described in CLP Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures for the purpose of protecting the health and safety of industrial and commercial users who are deemed capable of understanding and acting on the information provided. Please ensure that it is passed to the appropriate person(s) in your company, who is capable of acting on the information.

Frank Mercer & Sons Ltd

Chequerbent Works Manchester Road Chequerbent Westhoughton Bolton Lancashire BL5 3JF

Tel: 01942 841111 Fax: 01942 842388 e-mail: sales@toughsheet.co.uk website: www.toughsheet.co.uk

APPROVAL INSPECTION TECHNICAL APPROVALS FOR CONSTRUCTION

Agrément Certificate 99/3603 Product Sheet 1

FRANK MERCER DAMP-PROOF MEMBRANES

TOUGHSHEET 250, TOUGHSHEET 300 AND TOUGHSHEET 500 MAX DAMP-PROOF MEMBRANES

This Agrément Certificate Product Sheet⁽¹⁾ relates to Toughsheet Damp-proof Membranes, polyethylene membranes for use in solid concrete ground floors that are not subject to hydrostatic pressure, to protect buildings against moisture from the ground.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Resistance to water and water vapour — the membranes provide an effective barrier to the passage of moisture from the ground (see section 6).

Resistance to puncturing — the membranes have high resistance to puncture and on a smooth or blinded surface will not be damaged by foot or site traffic (eg wheelbarrows) (see section 7).

Durability — under normal service conditions the membranes will provide an effective barrier to moisture for the life of the concrete slab in which they are installed (see section 10).

The BBA has awarded this Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

1.an

Claire Curtis-Thomas Chief Executive

Date of Fifth issue: 19 June 2014

Originally certificated on 29 April 1999

Simon Wroe Head of Approvals — Materials

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

British Board of Agrément		tel: 01923 665300
Bucknalls Lane		fax: 01923 665301
Watford		e-mail: mail@bba.star.co.uk
Herts WD25 9BA	©2014	website: www.bbacerts.co.uk



Regulations

In the opinion of the BBA, Toughsheet Damp-proof Membranes, if installed, used and maintained in accordance with this Certificate, will satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



The Building Regulations 2010 (England and Wales) (as amended)

Requirement:	C2(a)	Resistance to moisture
Comment:		The products will meet this Requirement. See section 6 of this Certificate.
Regulation:	7	Materials and workmanship
Comment:		The products are acceptable. See section 10 and the <i>Installation</i> part of this Certificate.

The	e Building (\$	Scotland) Regulations 2004 (as amended)
Regulation:	8(1)	Durability, workmanship and fitness of materials
Comment:		The products are acceptable. See section 10 and the Installation part of this Certificate.
Regulation:	9	Building standards applicable to construction
Standard:	3.4	Moisture from the ground
Comment:		The products can enable a floor to satisfy the requirements of this Standard, with reference to clauses $3.4.1^{(1)(2)}$, $3.4.2^{(1)(2)}$, $3.4.4^{(1)(2)}$ and $3.4.6^{(1)(2)}$. See section 6 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The products can contribute to meeting the relevant Requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
Regulation:	12	Building standards applicable to conversions
Comment:		 All comments given for these products under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1⁽¹⁾⁽²⁾ and Schedule 6⁽¹⁾⁽²⁾. (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).

End		
Regulation:	23(a)(i)(iii)(b)(i)	Fitness of materials and workmanship
Comment:		The products are acceptable. See section 10 and the <i>Installation</i> part of this Certificate.
Regulation:	28(a)	Resistance to moisture and weather
Comment:		The products will contribute to a roof satisfying this Regulation. See section 6 of this Certificate.

Construction (Design and Management) Regulations 2007

The Building Regulations (Northern Ireland) 2012

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See section: 1 Description (1.1) of this Certificate.

Additional Information

NHBC Standards 2014

NHBC accepts the use of Toughsheet Damp-proof Membranes, provided they are installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Part 5, *Substructure and ground floors*, Chapter 5.1 *Substructure and ground bearing floors*, Section M8 *Damp-proof membrane*.

CE marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with harmonised European standard BS EN 13967 : 2012. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

1 Description

1.1 Toughsheet Damp-proof Membranes comprise a blown film of extruded low-density polyethylene (LDPE). The nominal characteristics are shown in Table 1.

	3		
Characteristic (unit)	Grade		
	Toughsheet 250	Toughsheet 300	Toughsheet 500 Max
Thickness (µm)	250	300	500
Width (m)	4	4	4
Roll length (m)	25	25	12.5
Watertightness* (2 kPa)	pass	pass	pass
Durability (artificial ageing)*	pass	pass	pass
Durability (alkali)*	pass	pass	pass
Colour	black, blue, clear	black, blue, yellow	black, blue, yellow

Table 1 Nominal characteristics

1.2 Ancillary materials used with Toughsheet Damp-proof Membranes are:

- mastic tape at least 0.2 mm thick, 25 mm wide, used for jointing
- girth tape adhesive polyethylene tape, 100 mm wide, used for sealing joints.

2 Manufacture

2.1 The membranes are manufactured from a blown film of extruded LDPE.

- 2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:
- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials •
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities •
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.3 The management system of Frank Mercer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by ISOQAR (Certificate 2092QM8001).

3 Delivery and site handling

3.1 Rolls of the membranes are packed in wrappers bearing labels with the product name and the BBA logo incorporating the number of this Certificate. Rolls are supplied shrink-wrapped and on pallets.

3.2 Rolls should be stored under cover on the original pallet or individually, on end.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Toughsheet Damp-proof Membranes.

Design Considerations

4 Use

4.1 Toughsheet Damp-proof Membranes are satisfactory for use in concrete floors not subject to hydrostatic pressure, in accordance with the relevant clauses of BS 8102 : 2009 and CP 102 : 1973.

4.2 The membranes can be installed either as an oversite membrane, between a blinded hardcore bed and the base concrete, or as a sandwich membrane in base concrete or between the base concrete and the screed.

5 Practicability of installation

The products must be installed by a competent installer, or a contractor, experienced with these types of products.

6 Resistance to water and water vapour



6.1 The membranes and the methods of jointing provide an effective barrier to the passage of moisture from the ground.

6.2 When installed in accordance with the following documents, the 300 µm and 500 µm membranes comply with the minimum sheet thickness detailed in the national Building Regulations. The 250 µm membrane additionally complies with the minimum sheet thickness detailed in the national Building Regulations for Scotland:

England and Wales — Approved Document C, Requirement C2(a), Section 3, clauses 4.8 and 4.9

Scotland — Mandatory Standard 3.4, clauses 3.4.1⁽¹⁾⁽²⁾, 3.4.2⁽¹⁾⁽²⁾, 3.4.4⁽¹⁾⁽²⁾ and 3.4.6⁽¹⁾⁽²⁾

Northern Ireland — Regulation 28(a), Technical Booklet C, Sections 1 and 2.

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

7 Resistance to puncturing

The membranes have a high resistance to puncture. On smooth or blinded surfaces they will not be damaged by normal foot or site traffic eg wheelbarrows. However, since they can be punctured by sharp objects, care should be taken to avoid damage during installation, particularly when handling building materials and equipment over the surface and when placing concrete or screeds.

8 Underfloor heating

When used in accordance with underfloor heating under normal operating conditions there will be no adverse effect on the membranes. However, the Certificate holder's advice should be sought in these circumstances.

9 Maintenance

As the membranes are confined within concrete ground floors and have suitable durability (see section 10), maintenance is not required. Any damage occurring during installation must be repaired prior to overlaying with concrete (see section 14).

10 Durability

10.1 When subjected to the normal conditions of use, the membranes will provide an effective barrier to the transmission of liquid water and water vapour for the life of the concrete slab in which they are installed.

10.2 Long periods of exposure to ultraviolet light will reduce the effectiveness of the membranes. The membranes should be protected from such exposure during storage and when in use.

11 Reuse and recyclability

The membranes comprise polyethylene, which can be recycled.

Installation

12 General

12.1 Installation of Toughsheet Damp-proof Membranes should be in accordance with the Certificate holder's instructions and clause 11 of CP 102 : 1973, the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989, and section 13 of this Certificate.

12.2 Unless the base is smooth, a surface blinding of soft sand or similar material should be used to prevent puncturing during installation or when the concrete or screed is being placed.

12.3 The membranes must be clean and free from dirt and grease.

12.4 The membranes may be installed in all conditions normal to ground-floor slab construction. Where there is a risk of ground becoming waterlogged, sub-soil drainage must be provided in accordance with CP 102 : 1973.

12.5 The membranes remain flexible in the extremes of temperature likely to occur in practice.

12.6 The type of floor finish to be used may limit the suitability of polyethylene damp-proof membranes. The guidance given in CP 102 : 1973 and BS 8102 : 2009, Table 1, should be followed.

13 Procedure

13.1 Adjacent sheets should be overlapped by at least 150 mm, and should be bound with mastic strips and sealed with 100 mm wide girth jointing tape (see Figure 1).



13.2 Alternatively, when it is not possible to keep the sheet dry, a double-welted fold should be formed using at least 300 mm of the membrane (see Figure 2). It is essential that the fold is held in position prior to placing the concrete, eg by weighting with bricks.





13.3 The damp-proof membrane must be continuous with the damp-proof course in the surrounding walls. Where necessary the membrane should be used as a vertical damp-proof course to link the two.

13.4 The membrane must be covered by a screed or other protective layer as soon as possible after installation. Care should be taken to ensure that the membrane is not stretched or displaced when placing the concrete or screed over the membrane. Sufficient allowance should be made to avoid bridging (ie creating areas of unsupported membrane) during screeding operations at details such as internal angles.

14 Repair

Perforations or punctures in the membranes should be patched with sheets of identical thickness, lapped at least 150 mm beyond the limits of the puncture and the laps so formed sealed with double-sided pressure sensitive tape.

Technical Investigations

15 Tests

Tests were carried out on Toughsheet Damp-proof Membrane and the results assessed to determine:

- dimensions
- density
- water vapour resistance
- water vapour permeability
- dart impact
- tensile strength and elongation

- low temperature flexibility
- nail tear
- trouser tear
- dimensional stability
- heat ageing at 80° for 56 days followed by tensile strength, elongation and nail tear
- short term UV ageing followed by tensile strengths and elongation
- tensile strength of joints
- heat ageing of joints at 60° for 28 days followed by tensile strength and elongation.

16 Investigations

The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

Bibliography

BS 8000-0 : 2014 Workmanship on construction sites — Introduction and general principles

BS 8000-4 : 1989 Workmanship on building sites — Code of practice for waterproofing

BS 8102 : 2009 Code of practice for protection of below ground structures against water from the ground

BS EN 13967 : 2012 Flexible sheets for waterproofing — Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet — Definitions and characteristics

BS EN ISO 9001 : 2008 Quality management systems - Requirements

CP 102 : 1973 Code of practice for protection of buildings against water from the ground

17 Conditions

17.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

17.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

17.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

17.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

17.5 In issuing this Certificate, the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

17.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/ system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.

British Board of Agreenent		tel: 01923 665300
Bucknalls Lane		fax: 01923 665301
Watford		e-mail: mail@bba.star.co.uk
Herts WD25 9BA	©2014	website: www.bbacerts.co.uk

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Page 1 of 2

Frank Mercer & Sons Ltd Chequerbent Works Manchester Road Chequerbent, Westhoughton Bolton, Lancashire BL5 3JF

DECLARATION OF PERFORMANCE

1. Unique Identification Code of the product type

T2/51665 99/3603

2. Identification and Use

Toughsheet thicknesses are 250, 300 and 500microns flexible sheets for waterproofing. Identification is printed on each pack of sheets including production date with label of certification attached to package

3. Intended use of Toughsheet products

For use in solid concrete ground floors that are not subject to hydraulic pressure to protect buildings against water from the ground

4. Name and Contact Address of Manufacturer

Frank Mercer & Sons Ltd, Chequerbent Works ,Manchester Road ,Chequerbent, Westhoughton, Bolton, Lancashire, BL5 3JF

5. System of Assessment and Verification of Constancy of Performance

System 2+

6. The Notification Factory Control Certification Body is BBA, BRITISH BOARD OF AGREEMENT

The BBA performed inspection of manufacturing plant and factory control and carries out continuous surveillance, assessment and evaluation of factory production control under system2+ as described in harmonised standard EN 13967

Notified body issued certificate of conformity of production control No 99/3603

Page 2 of 2

7. Technical Specifications

7.1 Description Toughsheet Damp-proof Membranes are a blown film of extruded polyethylene

Nominal Characteristics			- 1.,	Tolerence	%	
Thickness (microns)	250	300	500	+/- 10		
Standard Roll Length (m)	25	25	12.5	-0/+5		
Standard Sheet Width (m)	4	4	4	-0/+5		
Colours	blue	all				
or	black	all				
or	clear					
Tests : thickness		250		300	500	
Tensile Strength (newtons) minimum thicknesses		90		108	180	unaged all
Elongation at break (minimum %) thicknesses		500		500	500	unaged all
Tear Resistance (minimum,newtons)	unageo	. F				
	Inplan	e 10		12	20	
Cro	oss plar	ie 15		18	30	
				00000	and in	1000 1001

Tensile tests and elongation to BS2782.3-320, Tear resistance BS2782 method 360B 1991

Signed for and behalf of the manufacturer by ------- Director



Tel: +44 (0) 1327 272569 Fax: +44 (0) 1327 270157

<u>Material Specification</u> <u>MS41 Expansion Joint Filler Foam</u> <u>Closed Cell Colour Natural</u>

	UNITS	VALUES
DENSITY	Kg/m3	25
TENSILE STRENGTH	Мра	0.22 Longitudinal
		0.18 Transversal
ELONGATION AT	%	100 Longitudinal
BREAK		110 Transversal
COMPRESSION STRESS	Kpa	
10%		16
25%		36
50%		91
COMPRESSION SET		
FOR 22Hours at 25% at		
23°C		
¹ / ₂ Hour	%	18
24 Hours	%	10
OPERATING	°C	-40 to +90
TEMPERATURE RANGE		
THERMAL		
CONDUCTIVITY		
At 0°C	W/m°K	0.040
At 20°C		0.041
WATER ABSORPTION		
After 28 days	%	0.685

Meets Department of Transport Highways Works Volume 1 1991, Clause 1015 and 2303. For use as Expansion, Joint Filler and former in concrete panels and brick work. Resists polysulphide and polyurethane sealants. Suitable for use with sewage.

February 2008



Unit 1 Diversity Drive, Walsall WS2 8DS T: 01902 603 409 F: 01902 605 144

OPERATIONS AND MAINTENANCE MANUAL, EXTERNAL YARD CONCRETE SLAB

PROJECT CALDER PARK

WAKEFIELD

WINVIC

INDEX

Fortel Contact Details
 Work Description
 Design
 Floor Maintenance
 Hazards and Dangers
 Materials & Suppliers
 COSHH
 Material Testing

1 CONTACT DETAILS

Contracts Manager – George Singh mobile no. 07756505815

2 WORK DESCRIPTION

190 mm thick C40 N/mm² air entrainment concrete incorporating 11ayers A393 fabric reinforcement laid on a 1200 gauge polythene membrane. Surface received a Brush finish with trowelled margins cured with Sika Cure hard 24.

3 <u>DESIGN</u> By others


4 FLOOR MAINTENANCE (Uncovered Areas)

<u>Cleaning</u>

Regular cleaning is essential to stop dust and dirt building up, as increased surface wear or susceptibility to slips can result if a floor is not clean and dry. Frequency of cleaning will largely depend on the type of contamination. For maximum effectiveness the floor should be cleaned with a mechanical vacuum scrubber drier at least once per week.

Care should be taken when using cleaning material especially if used in the wrong concentration, giving rise to etching or wear.

<u>Spillages</u>

These should be wiped up or absorbed and removed as quickly as possible. Once removed the floor should be cleaned thoroughly.

Joint Inspection

Joints should be regularly inspected for signs of wear and damage. Any arris damage that has occurred should be quickly repaired as deterioration will accelerate once it has started. Any defective joint sealant in trafficked areas should be replaced.

Inspection and Action Schedule

The following guidelines are recommended for inspection and treatment.

Daily:

- Cleaning regime to remove dust, dirt and debris.
- Use floor scrubber or vacuum scrubber dryer.



Every 3 months:

• General and visual inspection of trafficked areas.

Repair any spalling or raveling of joint edges and replace joint sealant (as required)

Every 12 months:

- Full inspection of the floors condition.
- Replace sealant in floor joints if de-bonded or split due to movement.

Every 5 years:

■ Thoroughly clean the floor.

5 <u>HAZARDS AND DANGERS</u>

<u>Spillages</u>

These should be wiped up or absorbed and removed as quickly as possible. Once removed the affected area should be cleaned thoroughly.

6 MATERIALS AND SUPPLIERS

<u>Concrete</u> C40 N/mm² Hanson UK Telephone: 0330 123 4628

Polythene

1200-gauge Black BBA Supplier: Pre con Products Ltd., Unit B, General Castle Way, Rougham Industrial Estate, Rougham, Nr Bury St Edmunds, Suffolk, IP30 9ND. Telephone: 0844 800 2464



<u>Fabric</u> A393 Supplier: ROM Limited, Eastern Avenue, Trent Valley, Lichfield, WS13 6RN. Telephone: 0870 011 2883

<u>Tie Bars & Dowel Bars</u> R25 x 600mm long & H12 x 900mm long Supplier: Precon Products Ltd., Unit B, General Castle Way, Rougham Industrial Estate, Rougham, Nr Bury St Edmunds, Suffolk, IP30 9ND. Telephone: 0844 800 2464

<u>Isolation Joint</u>

Precon Expansion Foam Supplier: Precon Products Ltd., Unit B, General Castle Way, Rougham Industrial Estate, Rougham, Nr Bury St Edmunds, Suffolk, IP30 9ND. Telephone: 0844 800 2464

<u>Curing Agent</u> Adocure WW Supplier: Ado-mast Building Chemicals Limited, Lea Road Trading Estate, Waltham Abbey, Essex, EN9 1AE. Telephone: 01992 710684

7 <u>COSHH, TECHNICAL DATA & CARES CERTIFICATES</u> <u>COSHH</u>

- i) Concrete
- ii) Polythene
- iii) Adocure WW

Technical Data

- i) Polythene
- ii) Adocure WW

Cares Certificates

i) Fabric



8 <u>Material Testing</u> Concrete TestCubes GT Certification Ltd., Unit A10, Link One Industrial Park, George Henry Road, Great Bridge Road, Great Bridge, Tipton, West Midlands, DY4 7BU. Telephone: 0121 522 3957



SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING Product name: ADOCURE WW/WWT Synonyms: Proprietory concrete curing aid Company name: Adomast Manufacturing Ltd Engine Lane, Shafton, Barnsley, S72 8SP Tel: 01226 70786

2. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous ingredients: SODIUM SILICATE 10-30% EINECS: 229-912-9 CAS: 1344-09-8 [Xi] R38; [Xi] R41 3. HAZARDS IDENTIFICATION

Main hazards: Irritating to skin. Risk of serious damage to eyes.

4. FIRST AID MEASURES (SYMPTOMS)

Skin contact: There may be irritation and redness at the site of contact.

Eye contact: There may be pain and redness. The eyes may water profusely. There may be severe pain. The vision may become blurred. May cause permanent damage.

Ingestion: There may be soreness and redness of the mouth and throat. Nausea and stomach pain may occur. Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.

4. FIRST AID MEASURES (ACTION)

Skin contact: Remove all contaminated clothes and footwear immediately unless stuck to skin. Wash immediately with plenty of soap and water.

Eye contact: Bathe the eye with running water for 15 minutes. Transfer to hospital for specialist examination. Ingestion: Wash out mouth with water. Do not induce vomiting. If conscious, give half a litre of water to drink immediately. Consult a doctor.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so.

5. FIRE-FIGHTING MEASURES

Extinguishing media: Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

Exposure hazards: The material is not flammable therefore the media used is for the fire only. This product may give rise to hazardous fumes in a fire.

Protection of fire-fighters: Wear protective clothing to prevent contact with skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Mark out the contaminated area with signs and prevent access to unauthorised personnel. Do not attempt to take action without suitable protective clothing - see section 8 of SDS. Turn leaking containers leak-side up to prevent the escape of liquid.

Environmental precautions: Do not discharge into drains or rivers. Contain the spillage using bunding. Clean-up procedures: Absorb into dry earth or sand. Transfer to a closable, labelled salvage

container for disposal by an appropriate method.

7. HANDLING AND STORAGE

Handling requirements: Avoid direct contact with the substance. Avoid the formation or spread of mists in the air. Storage conditions: Store in cool, well ventilated area. Keep container tightly closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure there is sufficient ventilation of the area.

Respiratory protection: Respiratory protection is not normally required However suitable respiratory

equipment may need to be provided for those operations which generate vapour, mists or fumes and where exposure cannot be adequately controlled by local exhaust ventilation or other means

Hand protection: Protective gloves.

Eye protection: Tightly fitting safety goggles. Ensure eye bath is to hand.

Skin protection: Protective clothing.



Adomast Manufacturing Ltd Engine Lane, Shafton, Barnsley, S72 8SP Tel: 01226 707863 www.adomast.co.uk



Safety Data Sheet ADOCURE WW/WWT ABCD529 Page 2 of 2 Issued: 28/10/11 Revision No. 1

9. PHYSICAL AND CHEMICAL PROPERTIES State: Liquid Colour: Colourless Odour: Barely perceptible odour Evaporation rate: Slow Solubility in water: Soluble Viscosity: Non-viscous Relative density: 1.084 pH: 11-12 10. STABILITY AND REACTIVITY Stability: Stable under normal conditions. Conditions to avoid: Heat. Materials to avoid: Zinc. Acids. Aluminium. Fluorine vapours. Haz. decomp. products: This product may give rise to hazardous fumes in a fire. 11. TOXICOLOGICAL INFORMATION Hazardous ingredients: SODIUM SILICATE ORL RAT LD50 1280 mg/kg Chronic toxicity: Hazardous in case of contact with skin (irritant), very hazardous in case of eve contact (irritant). Routes of exposure: Refer to section 4 of SDS for routes of exposure and corresponding symptoms. 12. ECOLOGICAL INFORMATION Mobility: Readily absorbed into soil. Persistence and degradability: Not biodegradable. Bioaccumulative potential: No data available. Other adverse effects: Toxic to flora. The product is rated as moderately toxic to aquatic species. 13. DISPOSAL CONSIDERATIONS Disposal operations: Dispose of via an authorised person / licensed waste disposal contractor in accordance with local regulations. Waste code number: 16 03 04. Disposal of packaging: May be reused following decontamination. NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal. 14. TRANSPORT INFORMATION ADR / RID ADR Class: Not classified IMDG / IMO Class: Not classified IATA / ICAO Class: Not classified 15. REGULATORY INFORMATION Hazard symbols: Irritant. Risk phrases: R38: Irritating to skin. R41: Risk of serious damage to eyes. Safety phrases: S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S2: Keep out of the reach of children. S39: Wear eye / face protection. Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions. 16. OTHER INFORMATION Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product



Adomast Manufacturing Ltd Engine Lane, Shafton, Barnsley, S72 8SP Tel: 01226 707863 www.adomast.co.uk

Adocure WW Technical Specifications

Water based Surface Hardener & Curing Agent

ADOCURE WW performs by physically "locking" moisture into freshly cast concrete surfaces to allow full hydration of the cement allowing therefore, the concrete to achieve full and optimum cure. This is achieved by blocking the surface pores in the concrete surface with a hard, water resistant silicate compound. ADOCURE WW/T has been specially developed to perform over the most critical period for concrete curing, and in time it gradually shrinks, thereby unblocking the pores in the concrete giving access to the capillaries within the concrete which then allows the uninhibited uptake of subsequent concrete surface treatments such as floor coating systems or saline based waterproofing etc.

ADOCURE WWT is identical in every respect to ADOCUREWW other than it contains a trace of blue dye to ease application and identify areas for treatment. This is a fugitive dye designed to become transparent under the action of sunlight (UV light), and correctly applied will not permanently discolour the concrete

Advantages

- · Economical and very easy to apply.
- · Prevents premature drying out of the concrete surface
- Reduced risks of surface cracking and reduced likelihood of surface dusting.
- · Improves the durability of the concrete surface.

Application

Use on freshly cast surfaces

Apply progressively as soon as final tamping or trowelling of the concrete has been completed. If surface water is present a second application is recommended once the surface water has evaporated. Avoid ponding or over application of ADOCURE WW by applying at the correct rate, as ponding may glaze the surface of the concrete.

Use on vertical cast surfaces

On vertical surfaces (struck from shuttering for example) less surface water is present and this may cause freshly applied ADOCURE WW not to perform as designed. In these cases it is recommended initially to flood coat the outer surface with water as soon as the formwork is struck and as soon as, this water has run off, apply ADOCURE WW. If this is not done it is possible that the curing compound will be absorbed below the concrete surface leaving the concrete surface unprotected and if ADOCURE WWT has been used UV light may be unable to act upon the "fugitive dye", thus leaving the concrete with a permanent blue hue. This advice regarding the flood coating of concrete surfaces protected by formwork is applicable whatever curing agent you may be using. Curing agents are designed to lock moisture into concrete; they can only achieve this by being on the concrete's surface.

In extremes of temperature, to reduce the risk of thermal shock, it may be desirable to preheat both the ADOCURE WW and the water used to flood coat the concrete prior to application.

ADOCURE WW and ADOCURE WWT are water based products and as such are capable of freezing in extreme weather conditions. If this should occur prior to application simply allow defrosting and ensure that the contents of the container are thoroughly agitated before use.

At normal concreting temperatures the curing compound will not freeze and there will be no problems regarding application. Formwork surfaces should preferably be struck at temperatures above freezing and once again there will be no problems regarding application. As soon as either ADOCURE WW or ADOCUREW WT come into contact with the concrete surface they immediately react with the cement particles and block the pores allowing undisturbed hydration to commence.

Under subsequent exposure to freezing conditions curing compounds do not provide thermal protection and it may be advisable to provide independent thermal protection.

Immediately after use the application equipment should be thoroughly washed out with clean water.

NOTE. Care should be taken that over spray does not get onto paint or glass. Permanent damage may be caused if not rinsed off immediately.

Covera<u>ge</u>

Apply the selected grade by spray or watering can at a rate of approximately 4-6 m² per litre taking care to ensure complete coverage.

Date of issue 0<u>3.07.201</u>

Fech Data Sheet no. 410

Revision no v2



· Will enable the concrete to attain improved physical properties.



adomast.co.uk T + 44 (0)1226 707863 F + 44 (0)1226 718051 E info@adomast.co.uk Adomast Manufacturing Ltd, Engine Lane, Shafton, Barnsley, S72 8SP, UK



Storage

Adocure WW & WWT should be protected from frost. Containers must be kept sealed after use. The product may require mild agitation before use if stored for more than 6 months.

ShelfLife

In excess of 12 months in sealed containers, use within 2 months of opening. Roll or agitate prior to use.

Specification

Adocure WW & WWT is manufactured by Adomast Manufacturing Ltd and shall be applied strictly in accordance with the manufacturer's instructions. For specific advice regarding any aspect of this product, please consult our Technical Department

Health and Safety

During application avoid contact with eyes and skin. In the event of eye contact irrigate immediately with copious quantities of water and then seek medical advice. In the event of skin contact, wash with soap and water

See separate Safety Data Sheet for further information.



COSHH ASSESSMENT FOR ADOCURE WW

DESCRIPTION OF MATERIAL

COLOURLESS LIQUID WITH VERY LOW ODOUR

HAZARDS

IRRITATING TO THE SKIN. RISK OF SERIOUS DAMAGE TO EYES

HEALTH

THERE MAY BE IRRITATION IF CONTACT WITH SKIN CONTACT WITH EYES MAY CAUSE SEVERE PAIN AND PERMANENT DAMAGE INGESTION MAY CAUSE SORENESS AND REDNESS OF THE MOUTH AND THROAT. NAUSEA AND STOMACH PAIN MAY OCCUR. INHALATION MAY CAUSE IRRITATION OF THE THROAT AND TIGHTNESS IN THE CHEST

FIRST AID

SKIN CONTACT - WASH IMMEDIATELY WITH SOAP AND WATER. REMOVE ANY CONTAMINATED CLOTHING.

EYE CONTACT- WASH WITH COPIOUS AMOUNTS OF WATER. GO TO HOSPITAL FOR MEDICAL ATTENTION.

INGESTION - WASH OUT MOUTH WITH WATER. DO NOT INDUCE VOMITTING. IF CONSCIOUS, GIVE HALF LITRE OF WATER TO DRINK IMMEDIATELY. SEEK MEDICAL ATTENTION INHALATION - REMOVE PERSON FROM EXPOSURE

SPILLAGE

MARK OUT AREA CONTAMINATED AND PREVENT UNAUTHORISED ACCESS. CLEAN UP PROCEDURE - ABSORB WITH WITH DRY EARTH OR SAND. TRANSFER INTO CLOSABLE CONTAINER FOR CONTROLLED DISPOSAL. ENSURE OPERATIVES WEAR PROTECTIVE CLOTHING

CONTROL MEASURES

APPLY IN VENTILATED AREA. OPERATIVES TO WEAR RESPITORY PROTECTION, PROTECTIVE GLOVES, PROTECTIVE CLOTHING SUCH AS OVERALLS WITH NO EXPOSED SKIN

STORAGE AND APPLICATION

SUPPLIED IN 25 AND 200 LITRE CONTAINERS SHOULD BE KEPT IN A WELL VENTILATED AREA ON DRIP TRAYS LIQUID APPLIED TO CONCRETE SURFACE WITH A SUITABLE SPRAYER



FORTEL SERVICES

COSHH ASSESSMENT - READY MIXED CONCRETE

COMPOSITION

MIXTURE OF NATURAL AGGREGATES AND CEMENTITIOUS MATERIAL

HAZARDS <u>WET CONCRETE</u> IRRITATING TO THE SKIN. RISK OF SERIOUS DAMAGE TO EYES CAUSES BURNS <u>CONCRETE DUST</u> DUST COULD CONTAIN PARTICLES OF RESPIRABLE SIZE WHICH MAY CONTAIN SILICA.

HEALTH

IRRITANT IF IN CONTACT WITH SKIN, CEMENT BURNS/DERMATITIS CONTACT WITH EYES WILL CAUSE IRRITATION INHALATION MAY CAUSE COUGHING OR WHEEZING.

FIRST AID

SKIN CONTACT - WASH IMMEDIATELY WITH SOAP AND WATER. REMOVE ANY CONTAMINATED CLOTHING. ANY SIGNS OF BREAKING OF SKIN/REDNESS SEEK MEDICAL ATTENTION EYE CONTACT- WASH WITH COPIOUS AMOUNTS OF WATER. GO TO HOSPITAL FOR MEDICAL ATTENTION. INGESTION OF WET CONCRETE SEEK MEDICAL INHALATION - REMOVE PERSON FROM EXPOSURE

SPILLAGE

PREVENT ENTRY INTO DRAINS AND WATER COURSES REMOVE AS QUICKLY AS POSSIBLE

CONTROL MEASURES

AVOID SKIN AND EYE CONTACT OPERATIVES TO WEAR GLOVES, PROTECTIVE CLOTHING/GLASSES WHEN USING IN WET STATE WHEN CUTTING DRY CONCRETE THIS SHOULD BE CARRIED OUT AS A WET CUT OR IF DRY CUTTING DUST EXTRACTION SHOULD BE USED WITHIN BUILDINGS

MATERIAL SAFETY DATA SHEET (DIRECTIVE 91/155/EEC)

This data sheet has been produced to advise our customer regarding possible hazards with Flexible sheeting in recognition of our responsibility to health and safety at work act.

The use of our products does not entail any special hazard if they are handled according to normal good safety practices. Nevertheless, we would draw your attention to some specific information concerning their safe use. This information should not be construed as indicative of any new or unusual hazards that we have discovered, but rather that you should be properly informed of their characteristics and to discharge our duty as outlined in the Act.

1. Product and Company identification

Identification of Substances or Preparation:	Low density re-cycled Polyethylene.
Company Identification:	Frank Mercer & Sons Ltd Chequerbent Works, Manchester Road, Westhoughton. BL5 3JF
Emergency Contact Number	01942 841111 Jolene@toughsheet.co.uk

2. Composition/information on ingredients

100% re-cycled Low density Polyethylene (coloured Products include a maximum of 3% pigment)

Other additives may be included to achieve special properties depending on the end use of the product.

Coloured Sheeting will include a maximum of 3% Carbon Pigment.

There is no toxic element incorporated in the finished material and does not normally constitute a hazard.

PMF 38

3. Hazard Identification (Directive 67/548/EEC

None

4.	First Aid Measures	
a.	Skin Contact	No Special Measures
b.	Eye Contact	"
c.	Inhalation	"
d.	Ingestion	"

5. Fire Fighting Measures

Dry Powder
Water. Advice can be sought from local Fire authority
Gasses will be given off in a major fire situation, consult your local Fire authority.
Use self-contained breathing apparatus.

6. Accidental Release Measures

a. Personal Precautions	None
b. Environmental Precautions	None
c. Method of Cleaning up:	Not Applicable

7. Handling & Storage

a. Precautions during handling	There are no special precautions recommended for safe handling of flexible Polythene sheeting
b. Storage	If significant quantities of Polythene sheeting are stored, the local fire authorities should be advised of the fact in order that they are forewarned of the possible hazard.

8. Exposure Control/Personal Protection

a.	Exposure Control Limits	None
b.	Special Protective Measures	None

9. Physical & Chemical Properties

Physical State	Sheet Material
Odour	Faint
Decomposition Temperature	Begins at 160 degrees Cent. Decomposition is a function of time, high processing temperatures should not be applied for long periods. Above 200 degrees Cent decomposition occurs rapidly.
Flammability	will burn if it comes into direct contact with a naked flame or a radiant heat source such infrared heating element.
	Physical State Odour Decomposition Temperature

10.STABILITY & REACTIVITY

a. Thermal Decomposition	Decomposition will start at 160 degrees Cent.
b. Conditions to avoid	None
c. Materials to Avoid	None

11. Toxicological Information

a. Residual Monomer depolymerise	When heated the sheeting do not
b. Toxic Ingredients. However,	Does not constitute a toxic hazard.
	being made of totally recycled product it should not be used for directly wrapping food nor should sheet be used for children's playthings unless specifically formulated for this purpose.

12. Ecological Information

a. Environmental Effect:	The product is not biologically decomposable. It degrades under prolonged ultraviolet exposure. It floats on water and is insoluble in water. No bioaccumulation known.
	The product is non toxic.

13. Disposal Consideration

a. Disposal of Product	Through normal trade re-cycling outlets
b. Disposal of Packaging	By re-cycling. We are an accredited Re-cycler with the Department of the Environment and can take all LDPE products back for re-cycling and re-use.

14. Transport Information

a.	. No Special Precautions required	
b.	ADR	None
C.	UN Number	None

15. Regulatory Information

a. Risk Phrase	None
b. Safety Phrase	None
c. Classification Symbol	None

16.Other Information

a. Uses	Various
b. Processing Involving Heat	In operations such as HF Weldingor Vacuum Forming etc., excessive heat may give rise to evolution of plasticiser fumes, none of which are harmful or toxic.

c. Static Electricity	Build up of static electricity in rolls of Polythene film and sheeting may cause sparking when the material is earthed. In areas where this may be a potential hazard e.g. near flammable solvents, steps should be taken to eliminate safely the static charge and to prevent or minimise Subsequent recharging during further processing.
d. REACH	The data contained in this Material Safety Data Sheet has been prepared in accordance with formatting described in the REACH Regulation (EC) No 1907/2006, and described in CLP Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures for the purpose of protecting the health and safety of industrial and commercial users who are deemed capable of understanding and acting on the information provided. Please ensure that it is passed to the appropriate person(s) in your company, who is capable of acting on the information.

Frank Mercer & Sons Ltd

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e-mail: sales@toughsheet.co.uk

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NSPECTION ESTING ERTIFICATION S FOR CONSTRUCTION

> Agrément Certificate 99/3603 Product Sheet 1

FRANK MERCER DAMP-PROOF MEMBRANES

TOUGHSHEET 250, TOUGHSHEET 300 AND TOUGHSHEET 500 MAX DAMP-PROOF MEMBRANES

This Agrément Certificate Product Sheet⁽¹⁾ relates to Toughsheet Damp-proof Membranes, polyethylene membranes for use in solid concrete ground floors that are not subject to hydrostatic pressure, to protect buildings against moisture from the ground.

(1) Hereinafter referred to as 'Certificate'.

CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory • information where applicable
- independently verified technical specification
- assessment criteria and technical investigations •
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.

KEY FACTORS ASSESSED

Resistance to water and water vapour - the membranes provide an effective barrier to the passage of moisture from the ground (see section 6).

Resistance to puncturing — the membranes have high resistance to puncture and on a smooth or blinded surface will not be damaged by foot or site traffic (eg wheelbarrows) (see section 7).

Durability — under normal service conditions the membranes will provide an effective barrier to moisture for the life of the concrete slab in which they are installed (see section 10).

The BBA has awarded this Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

lan

Date of Fifth issue: 19 June 2014

Originally certificated on 29 April 1999

Simon Wroe Head of Approvals — Materials

Claire Curtis-Thomas **Chief Executive**

The BBA is a UKAS accredited certification body — Number 113. The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk

Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.

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Regulations

In the opinion of the BBA, Toughsheet Damp-proof Membranes, if installed, used and maintained in accordance with this Certificate, will satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



Requirement: C2((a)	Resistance to moisture
Comment:		The products will meet this Requirement. See section 6 of this Certificate.
Regulation: 7		Materials and workmanship
Comment:		The products are acceptable. See section 10 and the <i>Installation</i> part of this Certificate.

St.	he Building	(Scotland) Regulations 2004 (as amended)
Regulation:	8(1)	Durability, workmanship and fitness of materials
Comment: Regulation: Standard:	9 3.4	The products are acceptable. See section 10 and the <i>Installation</i> part of this Certificate. Building standards applicable to construction Moisture from the ground
Comment:		The products can enable a floor to satisfy the requirements of this Standard, with reference to clauses $3.4.1^{(1)(2)}$, $3.4.2^{(1)(2)}$, $3.4.4^{(1)(2)}$ and $3.4.6^{(1)(2)}$. See section 6 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The products can contribute to meeting the relevant Requirements of Regulation 9, Standards 1 to 6 and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
Regulation:	12	Building standards applicable to conversions
Comment:		 All comments given for these products under Regulation 9, Standards 1 to 6 also apply to this Regulation, with reference to clause 0.12.1⁽¹⁾⁽²⁾ and Schedule 6⁽¹⁾⁽²⁾. (1) Technical Handbook (Domestic). (2) Technical Handbook (Non-Domestic).



Construction (Design and Management) Regulations 2007

The Building Regulations (Northern Ireland) 2012

Construction (Design and Management) Regulations (Northern Ireland) 2007

Information in this Certificate may assist the client, CDM co-ordinator, designer and contractors to address their obligations under these Regulations.

See section: 1 *Description* (1.1) of this Certificate.

Additional Information

NHBC Standards 2014

NHBC accepts the use of Toughsheet Damp-proof Membranes, provided they are installed, used and maintained in accordance with this Certificate, in relation to *NHBC Standards*, Part 5, *Substructure and ground floors*, Chapter 5.1 *Substructure and ground bearing floors*, Section M8 *Damp-proof membrane*.

CE marking

The Certificate holder has taken the responsibility of CE marking the products in accordance with harmonised European standard BS EN 13967 : 2012. An asterisk (*) appearing in this Certificate indicates that data shown are given in the manufacturer's Declaration of Performance.

1 Description

1.1 Toughsheet Damp-proof Membranes comprise a blown film of extruded low-density polyethylene (LDPE). The nominal characteristics are shown in Table 1.

	5				
Characteristic (unit)	Grade				
	Toughsheet 250	Toughsheet 300	Toughsheet 500 Max		
Thickness (µm)	250	300	500		
Width (m)	4	4	4		
Roll length (m)	25	25	12.5		
Watertightness* (2 kPa)	pass	pass	pass		
Durability (artificial ageing)*	pass	pass	pass		
Durability (alkali)*	pass	pass	pass		
Colour	black, blue, clear	black, blue, yellow	black, blue, yellow		

Table 1 Nominal characteristics

1.2 Ancillary materials used with Toughsheet Damp-proof Membranes are:

- mastic tape at least 0.2 mm thick, 25 mm wide, used for jointing
- girth tape adhesive polyethylene tape, 100 mm wide, used for sealing joints.

2 Manufacture

2.1 The membranes are manufactured from a blown film of extruded LDPE.

- 2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:
- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.3 The management system of Frank Mercer has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2008 by ISOQAR (Certificate 2092QM8001).

3 Delivery and site handling

3.1 Rolls of the membranes are packed in wrappers bearing labels with the product name and the BBA logo incorporating the number of this Certificate. Rolls are supplied shrink-wrapped and on pallets.

3.2 Rolls should be stored under cover on the original pallet or individually, on end.

Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Toughsheet Damp-proof Membranes.

Design Considerations

4 Use

4.1 Toughsheet Damp-proof Membranes are satisfactory for use in concrete floors not subject to hydrostatic pressure, in accordance with the relevant clauses of BS 8102 : 2009 and CP 102 : 1973.

4.2 The membranes can be installed either as an oversite membrane, between a blinded hardcore bed and the base concrete, or as a sandwich membrane in base concrete or between the base concrete and the screed.

5 Practicability of installation

The products must be installed by a competent installer, or a contractor, experienced with these types of products.

6 Resistance to water and water vapour



6.1 The membranes and the methods of jointing provide an effective barrier to the passage of moisture from the ground.

6.2 When installed in accordance with the following documents, the 300 μm and 500 μm membranes comply with the minimum sheet thickness detailed in the national Building Regulations. The 250 μm membrane additionally complies with the minimum sheet thickness detailed in the national Building Regulations for Scotland:

England and Wales — Approved Document C, Requirement C2(a), Section 3, clauses 4.8 and 4.9

Scotland — Mandatory Standard 3.4, clauses 3.4.1⁽¹⁾⁽²⁾, 3.4.2⁽¹⁾⁽²⁾, 3.4.4⁽¹⁾⁽²⁾ and 3.4.6⁽¹⁾⁽²⁾

Northern Ireland — Regulation 28(a), Technical Booklet C, Sections 1 and 2.

- (1) Technical Handbook (Domestic).
- (2) Technical Handbook (Non-Domestic).

7 Resistance to puncturing

The membranes have a high resistance to puncture. On smooth or blinded surfaces they will not be damaged by normal foot or site traffic eg wheelbarrows. However, since they can be punctured by sharp objects, care should be taken to avoid damage during installation, particularly when handling building materials and equipment over the surface and when placing concrete or screeds.

8 Underfloor heating

When used in accordance with underfloor heating under normal operating conditions there will be no adverse effect on the membranes. However, the Certificate holder's advice should be sought in these circumstances.

9 Maintenance

As the membranes are confined within concrete ground floors and have suitable durability (see section 10), maintenance is not required. Any damage occurring during installation must be repaired prior to overlaying with concrete (see section 14).

10 Durability

10.1 When subjected to the normal conditions of use, the membranes will provide an effective barrier to the transmission of liquid water and water vapour for the life of the concrete slab in which they are installed.

10.2 Long periods of exposure to ultraviolet light will reduce the effectiveness of the membranes. The membranes should be protected from such exposure during storage and when in use.

11 Reuse and recyclability

The membranes comprise polyethylene, which can be recycled.

Installation

12 General

12.1 Installation of Toughsheet Damp-proof Membranes should be in accordance with the Certificate holder's instructions and clause 11 of CP 102 : 1973, the relevant clauses of BS 8000-0 : 2014, BS 8000-4 : 1989, and section 13 of this Certificate.

12.2 Unless the base is smooth, a surface blinding of soft sand or similar material should be used to prevent puncturing during installation or when the concrete or screed is being placed.

12.3 The membranes must be clean and free from dirt and grease.

12.4 The membranes may be installed in all conditions normal to ground-floor slab construction. Where there is a risk of ground becoming waterlogged, sub-soil drainage must be provided in accordance with CP 102 : 1973.

12.5 The membranes remain flexible in the extremes of temperature likely to occur in practice.

12.6 The type of floor finish to be used may limit the suitability of polyethylene damp-proof membranes. The guidance given in CP 102 : 1973 and BS 8102 : 2009, Table 1, should be followed.

13 Procedure

13.1 Adjacent sheets should be overlapped by at least 150 mm, and should be bound with mastic strips and sealed with 100 mm wide girth jointing tape (see Figure 1).



13.2 Alternatively, when it is not possible to keep the sheet dry, a double-welted fold should be formed using at least 300 mm of the membrane (see Figure 2). It is essential that the fold is held in position prior to placing the concrete, eg by weighting with bricks.

Figure 2 Double-welted fold joint



13.3 The damp-proof membrane must be continuous with the damp-proof course in the surrounding walls. Where necessary the membrane should be used as a vertical damp-proof course to link the two.

13.4 The membrane must be covered by a screed or other protective layer as soon as possible after installation. Care should be taken to ensure that the membrane is not stretched or displaced when placing the concrete or screed over the membrane. Sufficient allowance should be made to avoid bridging (ie creating areas of unsupported membrane) during screeding operations at details such as internal angles.

14 Repair

Perforations or punctures in the membranes should be patched with sheets of identical thickness, lapped at least 150 mm beyond the limits of the puncture and the laps so formed sealed with double-sided pressure sensitive tape.

Technical Investigations

15 Tests

Tests were carried out on Toughsheet Damp-proof Membrane and the results assessed to determine:

- dimensions
- density
- water vapour resistance
- water vapour permeability
- dart impact
- tensile strength and elongation

- low temperature flexibility
- nail tear
- trouser tear
- dimensional stability
- heat ageing at 80° for 56 days followed by tensile strength, elongation and nail tear
- short term UV ageing followed by tensile strengths and elongation
- tensile strength of joints
- heat ageing of joints at 60° for 28 days followed by tensile strength and elongation.

16 Investigations

The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

Bibliography

BS 8000-0 : 2014 Workmanship on construction sites — Introduction and general principles

BS 8000-4 : 1989 Workmanship on building sites — Code of practice for waterproofing

BS 8102 : 2009 Code of practice for protection of below ground structures against water from the ground

BS EN 13967 : 2012 Flexible sheets for waterproofing — Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet — Definitions and characteristics

BS EN ISO 9001 : 2008 Quality management systems - Requirements

CP 102 : 1973 Code of practice for protection of buildings against water from the ground

17 Conditions

17.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

17.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

17.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

17.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

17.5 In issuing this Certificate, the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

17.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/ system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.

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Frank Mercer & Sons Ltd Chequerbent Works Manchester Road Chequerbent, Westhoughton Bolton, Lancashire BL5 3JF

DECLARATION OFPERFORMANCE

1. Unique Identification Code of the product type

T2/51665 99/3603

2. Identification and Use

Toughsheet thicknesses are 250, 300 and 500microns flexible sheets for waterproofing. Identification is printed on each pack of sheets including production date with label of certification attached to package

3. Intended use of Toughsheet products

For use in solid concrete ground floors that are not subject to hydraulic pressure to protect buildings against water from the ground

4. Name and Contact Address of Manufacturer

Frank Mercer & Sons Ltd, Chequerbent Works ,Man chester Road ,Chequerbent, Westhoughton, Bolton, Lancashire, BL5 3JF

5. System of Assessment and Verification of Constancy of Performance

System 2+

6. The Notification Factory Control Certification Body is BBA, BRITISH BOARD OF AGREEMENT

The BBA pérformed inspection of manufacturing plant and factory control and carries out continuous surveillance, assessment and evaluation of factory production control under system 2+ as described in harmonised standard EN 13967

Notified body issued certificate of conformity of production control No 99/3603

7. Technical Specifications

7.1 Description.Toughsheet Damp-proof Membranes arse a blown film of extr,uded polyethylene

Nominal Characteristics						Tolerence	%	
Thickness (microns)		250		300	500	+/- 10		
Standard Roll Length (m)		25		25	12.5	-0/+5		
Standard Sheet Width (m)		4		4	4	0/+5		
COIOUCS		blue	all					
	or	black	all					
	or	clear						
Tests : thickness			2	250		300	500	
Tensile Strength (newtons) minim thicknesses	um		9	90		108	180	unaged all
Elongation at break (minimum %) thicknesses			Ę	500		500	500	unag.ed all
Tear Resistance (minimum,newtor	าร) น	naged						
		lnplane	e 1	10		12	20	
	Cro	ss plan	e ´	15		18	30	
Tensile tests and elongation to BS	2782	2.3-320	, Te	ar res.i	stance	BS2782 r	netho	d 360B 1991

Signed for and behalf of the" manufacturer by ------ Director



Tel: +44 (0) 1327 272569 Fax: +44 (0) 1327 270157

<u>Material Specification</u> <u>MS41 Expansion Joint Filler Foam</u> <u>Closed Cell Colour Natural</u>

	UNITS	VALUES
DENSITY	Kg/m3	25
TENSILE STRENGTH	Мра	0.22 Longitudinal
		0.18 Transversal
ELONGATION AT	%	100 Longitudinal
BREAK		110 Transversal
COMPRESSION STRESS	Кра	
10%		16
25%		36
50%		91
COMPRESSION SET		
FOR 22Hours at 25% at		
23°C		
¹ / ₂ Hour	%	18
24 Hours	%	10
OPERATING	°C	-40 to +90
TEMPERATURE RANGE		
THERMAL		
CONDUCTIVITY		
At 0°C	W/m°K	0.040
At 20°C		0.041
WATER ABSORPTION		
After 28 days	%	0.685

Meets Department of Transport Highways Works Volume 1 1991, Clause 1015 and 2303. For use as Expansion, Joint Filler and former in concrete panels and brick work. Resists polysulphide and polyurethane sealants. Suitable for use with sewage.

February 2008