



CONCRETE CANVAS®

Concrete Impregnated Fabric

FREEZE THAW RESISTANCE



RAIL



ROAD



MINING



PETROCHEM



AGRO



UTILITIES



PUBLIC WORKS



DEFENCE



DESIGN



SHELTER



Winner Technical Innovation Award



Innovation Award ICE Wales Cymru Awards 2017



2014 Fast Track 100 16th fastest growing company in the UK.



2014 Queen's Award for Enterprise in Innovation



2013 Macrobert Award Finalist



2013 Innovation Award Winner Railtex Exhibition



2012 R&D 100 Award winner R&D Magazine



2009 Winner Material ConneXion Medium Award Material of the Year



D&AD Yellow Pencil Award Winner Product Design

Freeze-Thaw Resistance (+/-50°C)

Based on testing performed according to BS EN 12467:2004 p7.4.1 Fibre-cement flat sheets – Product specification and test methods.

Concrete Canvas® GCCM* (CC) products have been independently tested by PARC to assess the performance of CC5, CC8 and CC13 when subject to 100 cycles of freeze-thaw. The test method used is based on BS EN 12467:2004 p7.4.1, “Fibre-cement flat sheets – Product specification and test methods.” In order to meet the requirement to test within a temperature regime from -50°C to +50°C, the curing process was based on “BS EN 60068-2-14:2009 Test Nb”.

The test method involves testing sample bars (40x160mm) which are subject to 100 cycles of freezing at -50°C and thawing at +50°C. The temperature was changed at a rate of 1.5°C per minute and remained at each extreme for one hour. Samples were submerged in water at ambient temperature during each cycle, overnight and through weekends to keep them saturated through the freezing cycle. Following the 100 cycles of freeze-thaw cycling the samples were subject to visual inspection and to a 3-point bend flexural strength test.

The ratio between the flexural strength of each specimen and its control counterpart is calculated and the mean value is listed below as R_L . This is calculated at a 95% confidence level using the methodology established using ISO 2602.

According to BS EN 12467:2004, R_L shall not be less than 0.75 in order to qualify as a pass.

Summary of Results

| | | CC5™ | CC8™ | CC13™ |
|------------------------------------|-----------------------|-------|-------|-------|
| FREEZE AND THAW: -50°C to +50°C | Mean Strength (N) | 102.2 | 186.4 | 341.8 |
| | Retained strength (%) | 128% | 126% | 112% |
| | R_L | 1.25 | 1.20 | 1.03 |

CC products showed no loss of flexural strength following 100 cycles of freeze-thaw.

The results listed here should be used for indicative purposes only. Please contact Concrete Canvas Ltd with the specific nature of your application detailing the temperature profile under which the material will be used, in order that we can provide more information on the suitability of CC.