

TECHNICAL REPORT
ON WATERPROOFING PROPERTIES
OF THE WATERPROOFING PRODUCT WALL-TECH C.W.C OF E.WOOD LTD
(GREAT BRITAIN) FOR WATERPROOFING OF UNDERGROUND AND
OVERGROUND STRUCTURES

RIGA - AUGUST, 1995

The tests were sponsored in July, 1995, by AD REM LIMITED, an official distributor of E.WOOD LIMITED(Great Britain) in The Baltic States and CIS.

The purpose of the laboratory tests was to determine the resistance of the waterproofing product WALL-TECH CWC to hydro-static water pressure when applied for waterproofing of internal and external surfaces of constructions operating under adverse hydro-geological conditions.

The object of the tests: Waterproofing Product WALL-TECH CWC.

The laboratory tests were conducted by The Section of Building Materials of The Department of Building of Riga Technical University in July-August 1995.

The tests purpose included the determination of WALL-TECH CWC compliance to GOST 12730.5-84 : "Concretes. Methods of Determination of Waterproofing Properties".

1. WALL-TECH CWC: DETERMINATION OF WATERPROOFING PROPERTIES

Concrete models were produced in the form of cylinders (6 pieces) with high and diameter of 150 mm. The models were cast of flexible concrete mixture without vibro-pressure application to produce low grade waterproofing concrete.

Waterproofing properties of the concrete models were determined by "wet spot" methods according to GOST 12730.5-84 prior to the product application and were found to be 0.2MPa(2 kg/sq.cm).

After drying out the upper horizontal surface of the model was cleaned by wire brush and washed with clean water.

Thortex Wall-Tech CWC was thoroughly mixed with water according to the manufacturer's instructions (5:1 by weight). The prepared surface of the model was wetted and the prepared Wall-Tech CWC was applied by trowel to give 2.5-3.0 mm thickness, followed by smoothing out with a float.

The samples were put into a standard hardening chamber with temperature of 20 deg.C and relative humidity of over 95%.

The waterproofing properties of Thortex Wall-Tech CWC were determined after 7 and 28 days of cure by two methods as follows:

1.1. The hydro-static pressure was applied to the untreated side of the concrete with Thortex Wall-Tech CWC being on the opposite side of the model in most unfavourable position, since under excessive water pressure there is a risk of the applied coating being laminated from the concrete surface.

1.2. The hydro-static pressure was applied directly to Wall-Tech CWC thus pressing it to the concrete surface.

The water pressure was increased in stages of 0.2 MPa (0.4; 0.6; 0.8, and 1.0 MPa). The exposure time for each pressure level was 16 hours. The results obtained are given in Table 1.

Table 1

| The cure time of Wall-Tech CWC prior to the tests | Hydro-static pressure is applied to concrete side of the model | | Hydro-static pressure is applied to Wall-Tech CWC side of the model | |
|---|--|-----------------------|---|-----------------------|
| | Pressure MPa (kg/sq.cm) | Exposure time (hours) | Pressure MPa (kg/sq.cm) | Exposure time (hours) |
| 7 days | 0.4 (4.0) | 16 | 0.4 (4.0) | 16 |
| | 0.6 (6.0) | 16 | 0.6 (6.0) | 16 |
| | 0.8 (8.0) | 16 | 0.8 (8.0) | 16 |
| | 1.0 (10.0) | 16 | 1.0 (10.0) | 16 |
| 28 days | 0.4 (4.0) | 16 | 0.4 (4.0) | 16 |
| | 0.6 (6.0) | 16 | 0.6 (6.0) | 16 |
| | 0.8 (8.0) | 16 | 0.8 (8.0) | 16 |
| | 1.0 (10.0) | 16 | 1.0 (10.0) | 16 |

Three samples were exposed then to constant pressure of 1.0-0.85 MPa for additional period of 21 days and successfully passed the test.

2. RECOMMENDATIONS FOR WALL-TECH CWC APPLICATIONS TO OLD SURFACES

In case the waterproofing product is to be applied onto old or contaminated concrete, the following additional procedures should be observed:

2.1. All contaminations should be removed and the fragile areas should be cleaned by wire brushes to expose the sound base prior to the product application.

2.2. All oil or grease contaminations should be removed by steam detergent cleaning and washed by hot water pressure.

2.3. Water-soluble substances (salts) should be washed off by copious quantities of cold water.

2.4. The insoluble contaminations should be wetted by brush or spraying equipment and treated with 5% solution of hydrochloric acid, followed by thorough water washing.

3. CONCLUSIONS

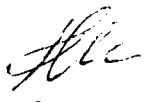
3.1. The WALL-TECH CWC product of E.WOOD LTD (Great Britain) is capable of withstanding hydro-static pressure over 1 MPa (10 kg/sq.cm) and corresponds to waterproofing level W10. The product has not been tested for higher pressure values.

4. RESOLUTION

4.1. The waterproofing product WALL-TECH CWC can be recommended for both internal and external waterproofing of all cementous and concrete constructions: e.g. basements, settling basins, tanks, and other underground and overground constructions operating under unfavourable hydro-geological conditions.

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