K.U. LEUVEN

LABORATORIUM REYNTJENS

RESEARCH AND DEVELOPMENT

WATER VAPOUR-PERMEABILITY OF A CARBONATATION-RESISTANT CONCRETE PAINT

U/REF.: RK/lb   3001 HEVERLEE, 1993-7-12
O/REF.: CL/KL/R/27430D/93   P.V. : R/27430D/93
Ontvangstdatum materialen :   Pag. : 1/4
Ontvangstdatum proefaanvraag :

DAMPDOORLATENDHEID VAN CARBONATATIEREMMENDE BETONVERF

Op aanvraag van   :   De heer Rudy Keppens
                                     Technisch Direkteur
                                     Nijverheidsweg 24

        en

                                     2240 ZANDHOVEN

Voor rekening van   :

Werf   :

Bestek   :

Aannemer   :

Materialen   :   2 monsters:
                                     - Indupact, acrylaatprimer
                                     - Inducryl gevel, elastische acrylaatcoating

Proeven   :   Uitgevoerd volgens uw proefaanvraag
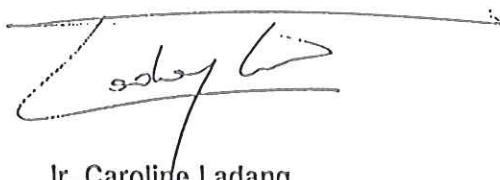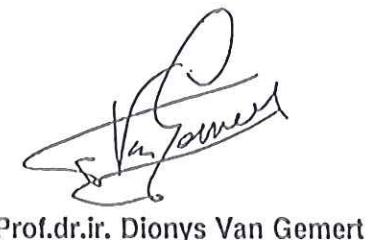
Ir. Caroline Ladang   Prof.dr.ir. Dionys Van Gemert

WATER VAPOURPERMEABILITY OF A CARBONATATIONRESISTANT CONCRETEPAINT

1.Materials

By REWAH nv, on 1992-12-02, 2 samples have been handled over to laboratorium Reyntjens.
It concerns the following products:
- Indupact, an acrylic primer
- Inducryl facade, an elastic acrylic coating

2.Tests

There have been asked to determine the water vapourpermeability.

3.Testcriteria

The test was realised in accordance to the prescriptions of treatement of concrete with paint on nude concrete and for the touch up of already painted concrete, exposed to atmospheric conditions, Ministry of Public Works, edition 1974.
The tests have been realised following the method described in par.6.3.6 of this norm.
Seven samples have been tested.
The film was prepared following the prescriptions of this norm.
The film was realised in 2 layers with an interval of 48 h.
- layer 1: 350 μ Inducryl facade
- layer 2: 360 μ Inducryl facade
After 7 days drying at 20°C, 60 % relative humidity the tinfoil was released in a mercurybath and the samples were prepared following the norm.
The preparation is shown in fig.1

Fig.1: Preparation of the samples for the determination of water
vapourpermeability

terwards the weight of the sample is taken and the samples are placed in an
siccator, in which, previously, during 7 days a concentrated
gnesiumnitrate solution was brought in, in order to obtain at 20 °C a
lative humidity of 55 %.
ter 7 days the samples are weight again and the water vapourpermeability
ctor is calculated as follows:

$$P = \frac{q \times L}{A \times t \times \Delta p}$$

witch q = amount of water gone through the film (kg)
      L = thickness of the film (m)
      A = surface of the film (m²)
      t = duration of the test = 168 hours
      Δp = difference in atmosphere pressure = 103,95 kg/m²

Results of the test noted in tabel 1.

Sample	Amount of water trough the film	Thickness	Surface of the films	Duration	Water vapour-permeability
nr.	kg	m	m²	uren	10^{-9} m/h
1	0,0002091	0,000739	0,000509906	168	17,35
2	0,0002468	0,00074	0,000509906	168	20,51
3	0,0001879	0,000747	0,000509906	168	15,76
4	0,0002297	0,000743	0,000509906	168	19,17
5	0,0002095	0,000748	0,000509906	168	17,60
6	0,0001906	0,000746	0,000509906	168	15,97
7	0,0002009	0,000748	0,000509906	168	16,88
Average value					17,28

Tabel 1: Results of the water vapourpermeability