

TEST REPORT TRANSLATION

CLIENT: **PANELES PÉTREOS, S.L.**

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TESTED MATERIAL: **PETREAN INSULATING PANEL TEST SPECIMENS**

PURPOSE OF THE REQUEST: **SEVERAL TESTS**

RECEIPT DATE: **12.09.2005**

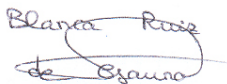
TEST BEGINNING DATE: **22.09.2005**

TEST END DATE: **14.11.2005**

REPORT EMISSION DATE: **15.11.2005**

The results of the tests can only be applied to the material received and tested in this Research Centre on the indicated dates.

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1. TEST SPECIMENS

On 12.09.2005 CIDEMCO received 50 petrean insulating panel test specimens without reference from the company "**PANELES PÉTREOS, S.L.**", of approximately (100 x 100 x e) mm in size.

2. TESTS REQUESTED

The requested tests are the following:

- ◆ Determining adhesion by traction in non-aged test specimens
- ◆ Determining adhesion by traction in aged test specimens:
 - 7 days of immersion in water at 20° C
 - 3 days at -20° C
 - 3 days at 80° C

3. CARRIED OUT TESTS

The following tests have been carried out:

◆ Determining adhesion by traction in non-aged test specimens

The test is carried out on the petrean panel test specimens of (100 x 100 x e) mm received. To carry out the test, a metal plate of (100 x 100) mm is glued to the test specimen on both sides as a support for anchoring it to the dynamometer.

A traction test is carried out on the dynamometer at 50 mm/min. The breakage resistance of the line joining the petrean coating with the extruded polystyrene nucleus is determined.

◆ Determining adhesion by traction in aged test specimens

The test specimens received have been subjected to the following ageing cycles :

- 7 days of immersion in water at 20° C and 2 hours at 23° C and 50% relative humidity
- 3 days at -20° C and 2 hours at 23° C and 50% relative humidity
- 3 days at 80° C

A traction test has then been carried out after these cycles under the same conditions as those explained in the previous section.

4. RESULTS

In the following table are showed the obtained results:

Test specimen	F without ageing (N)	Res. without ageing (MPa)	F water (N)	Res. water (MPa)	F freezer (N)	Res. freezer (MPa)	F heater (N)	Res. heater (MPa)
1	4380	0.44	2410	0.24	3870	0.39	3270	0.33
2	3780	0.38	1670	0.17	3690	0.37	4300	0.43
3	3980	0.40	2390	0.24	3750	0.38	4890	0.49
4	6160	0.62	2230	0.22	3900	0.39	4200	0.42
Average		0.46±0.11		0.22±0.03		0.38±0.01		0.42±0.07

It should be pointed out that, in the course of the traction test, many test specimens broke at the joint of the metal plate that had been attached in order to carry out the test, without the joint subject to testing ending up being broken. This occurred even at values higher than those obtained for the joint of the petrean coating with the extruded polystyrene nucleus, which indicates that the values obtained could end up being higher in the case of a larger sample.

As far as ageing is concerned, there are no significant changes in appearance following the above, and a slight drop in resistance is noted in the case of the freezer and heater cycles, and higher in the case of the water, with a minimum resistance value of 17000 Kg/m² being obtained.