

ALMI “POLYMER CONCRETE”

Technical Specification

The concrete top (usually manufactured in thickness of 5cm) is of a composite nature, which involves an exclusive process developed by ALMI. Built as a tri-dimensional structure it combines non-saturated polyester resin, fiberglass, cement, mineral filler and polyurethane coating; the end result shows a reasonable weight, an incredible mechanical strength and major usability advantages as described in detail below.

ULTRACEM

The top part of the composite is made of **ultra performing fiber reinforced concrete**, PU protected, called **ULTRACEM**. It is a polymer concrete made of various fine aggregates, with a resin-binding agent.

It is a reliable material, highly compact with an excellent homogeneity; the presence of fibers refrains the appearance of cracks; being non porous, it is frost resistant and permanently watertight.

ULTRACEM is totally insensitive to stains and aggressive chemicals; in the kitchen, it takes the heat of very hot pots, as well as oil, which does not leave permanent mark, and can be cleaned off with a sponge.

ULTRACEM resistance to very high temperature can be tested with cigarette being crushed onto the surface without leaving any trace.

ULTRACEM manual surfacing gesture of the operator, which shows on each top, is sanded down and polished with different possibilities of tone from mat, satin to gloss. The rendering is smooth skin like; the concrete makes itself soft, silky and very sensual.

It can be mixed with fine sand to produce granito like surface (with shades in white, grey and black).

It can also (specially for outdoor use) show a rough surface (fairly similar to those of cast concrete walls).

ULTRACEM passed the American Standard tests part of **ASTM D1308** and a number of other different tests.

ASTM D1308 covers determination of the effect of various household chemicals on clear finishes, resulting in any objectionable alteration in the surface, such as discoloration, change in gloss, blistering, softening, swelling, loss of adhesion, or special phenomena.

Results of this test are described below.

Tops made of ULTRACEM can be used for **INDOOR** and **OUTDOOR** purposes.

TESTS ALREADY IMPLEMENTED ON ULTRACEM

A. TESTMETHOD : in accordance with ASTM D1308 (American Standard - report available)

1. Household Chemicals :

- Alcohol,
- Thinner,
- Acetate Acid,
- Tooth paste,
- Coffee,
- Body Lotion,
- Bottled Sauce.

» **ALL TESTS SUCCESSFUL.**

2. Other tests part of the ASTM procedure :

- Adhesion test,
- Coin test,
- Blocking (2 psi),
- Hot (+60 °C) and cold (-20 °C) for 10 cycles.

» **ALL TESTS SUCCESSFUL.**

B. Other Tests Performed Internally

1. Boiling Water Test

A kettle full of boiling water (10mn), is brought immediately from the gas stove onto the surface of the ULTRACEM material, and left 10 minutes;

» **No modification/dicoloration/etc., is observed.**

2. Ability to Withstand UV

The kind of polyester resin used in our process offers an excellent protection to UV exposure. Further, this UV protection can be enhanced by the use of a top coat of Acrylic Polyurethane.

2 types of protection are offered :

- a. Alkyde Polyurethane Lacquer: use for interior purpose;
- b. Acrylique Polyurethane Lacquer : for semi and full exterior use : no discoloration observed in full sun (under UV index 11) after long exposure.

3. Cigarette Test

A cigarette is lit, and taken to full bright red incandescence; it is then applied/squashed directly to the surface of ULTRACEM and left for few seconds until cooling down is attained;

Absolutely no damage is observed; no discoloration, or any other trace can be seen on the ULTRACEM surface.

4. Various Other Tests

- Total immersion in a swimming pool for 2 days.
- Storage in a deep freezer (-20 °C) for 2 days.

No alteration is observed.