

## Component system EIFS



Technical specification

- A. Cement Free Fiber Reinforced ( glue ) for fixing sheets on the wall + Fastener nail
- B. Extruded Polystyrene (XPS) insulation
- C. Cement Free Fiber Reinforced
- D. Glass Fiber Mesh
- E. Cement Free Fiber Reinforced
- F. Acrylic Primer under topcoat
- G. Heavy tex with marble

\* Please refer to the relevant technical datasheets for recoating and More information

### **Cement Free Fiber Reinforced**

#### Description

Dry-mix polymer adhesive and base coat containing Portland cement, and requiring only water for mixing.

board to expanded polystyrene insulation board.

- For use with Senerflex, Senturion™ I, II, and III, Senergy Cement-Board Stucco™ System and all Senergy Surfacing Systems to embed CORNER MESH and SENERGY REINFORCING MESH.

## Primary uses

- For use with the Senerflex Wall System to adhere expanded polystyrene insulation board to the following acceptable substrates: SENERSHIELD™, SENERSHIELD-R, unpainted and unglazed concrete or unit masonry, Dens-Glass Gold (ASTM C1177), Fiberock Aqua-Tough Sheathing, water-resistant core gypsum sheathing (ASTM C79/ASTM C1396), new and untreated Exposure 1 or exterior grade plywood or Exposure 1 OSB, PermaBase cement-board, Wonder Board cement-board, Durock cement-board, Plycem cement-board, Harditex cement-board, and Eterspan cement-board (ASTM C1325 Type A Exterior). Note: Wood-based sheathing substrates require priming with Senerprime.

## Features Benefits

- Dry, bagged product
- Does not require heated shipping or storage, just add water to mix
- Mix only what you need
- Use for small repairs, reduces dumpster and landfill costs of unit disposal

## Mixing

- Place contents of each bag in a 19 litre container which is clean and free of foreign

## Packaging

25kg per bag

## Coverage

Approximate coverage rates are as follows:

- Adhere EPS insulation board to substrate:  
7.2m<sup>2</sup> per bag via notched trowel method  
8.1m<sup>2</sup> per bag via ribbon and dab method
- Embed FLEXGUARD 4: 12.2m<sup>2</sup> per bag,  
Embed INTERMEDIATE 12: 8.6m<sup>2</sup> per bag,  
Embed HI-IMPACT 20 & FLEXGUARD 4:  
7.2m<sup>2</sup> per bag
- Adhere EPS insulation board to substrate and embed FLEXGUARD 4: 5.1m<sup>2</sup> per bag

Lower cement-to-polymer ratio Reduces the chance for efflorescence

Smooth, creamy consistency

Trowels easily, speeds mesh embedment, reduces applicator arm fatigue, increases jobsite productivity

Water based

Safe, non-toxic, clean up easily with soap and water

board to ensure uniform contact and high initial grab.

substances.

Do not use a container which has contained or been cleaned with a petroleum-based product.

- Fill the container with approximately 5.6 litres of clean, potable water
- Add ALPHA DRY BASE COAT in small increments, mixing after each addition.
- Mix the contents of the ALPHA DRY BASE COAT unit with a low speed drill and paddle mixer until thoroughly blended.
- Additional ALPHA DRY BASE COAT or water may be added to adjust workability.
- Let stand for 5 minutes, then remix and retemper before use.
- Additives are not permitted.
- Close container when not in use.
- Clean tools with soap and water immediately after use.

## Application

To adhere EPS to acceptable substrates or to other EPS:

NOTCHED TROWEL METHOD - Apply mixed ALPHA DRY BASE COAT to entire surface of insulation board using a stainless steel trowel with 13mm x 13mm notches spaced 13mm apart, or 10mm x 10mm notches spaced 10mm apart.

#NAME?

Note: Ribbon & dab method is not recommended on gypsum sheathing substrates or Dens-Glass Gold. Allow application of insulation board to dry (normally 8 to 10 hours) prior to application of ALPHA dry BASE COAT/REINFORCING MESH.

To adhere EPS to acceptable substrates on Senerflex Channeled Adhesive Design option only: Apply to solid surface of insulation board using a stainless steel trowel with 13mm x 13mm notches spaced 50.8mm apart, with the notches installed vertically [parallel to the 50.8mm dimension]. Allow application of EPS insulation board to dry (normally 8 to 10 hours) prior to application of ALPHA BASE COAT/REINFORCING MESH.

As a Base Coat for embedding Reinforcing Mesh: ALPHA DRY BASE COAT shall be applied so as to achieve Reinforcing Mesh embedment with no Reinforcing Mesh color visible. Ensure Reinforcing mesh is free of wrinkles. Allow ALPHA DRY BASE COAT with embedded Reinforcing Mesh to dry hard (normally 8 to 10 hours) prior to application of Senergy Primer or Finish.

## Limitations

- Protect bagged materials from moisture during transportation and storage.
- Store Senergy materials in a cool, dry place. Store at no less than 4°C. Protect from extreme heat and direct sunlight. Shelf life is one year when unopened and stored as directed.
- Do not apply Senergy materials in ambient

& DAB METHOD—Apply a ribbon of mixed ALPHA DRY BASE COAT approximately 50mm wide by 10mm thick to entire perimeter of each board with a trowel. Apply dabs or ribbons of 10mm thickness by 100mm in diameter, approximately 200mm over entire surface of

## Technical Data

CAN4-S101-M standard methods of fire endurance tests of building construction & materials:

The Senerflex Wall System with ALPHA DRY BASE COAT satisfied conditions of acceptance.

CAN4-S114 standard test for determination of non-combustibility in building materials:

ALPHA DRY BASE COAT satisfied conditions of acceptance.

## Health and Safety

### Caution

Contains crystalline silica, Portland cement, calcium carbonate, fly ash, proprietary polymer.

### Risk

Product is alkaline on contact with water and may cause injury to skin or eyes. Ingestion or inhalation of dust may cause irritation. Contains crystalline silica. NTP and IARC recognize respirable crystalline silica as a human

temperatures below 4°C. Provide supplementary heat during installation and drying period at least 24 hours after installation and until dry when temperatures less than 4°C prevail.

- Do not apply Senergy materials to frozen surfaces.

### First Aid

- For eye contact, flush thoroughly with water for at least 15 minutes.

- For skin contact, wash affected areas with soap and water. If irritation persists, SEEK

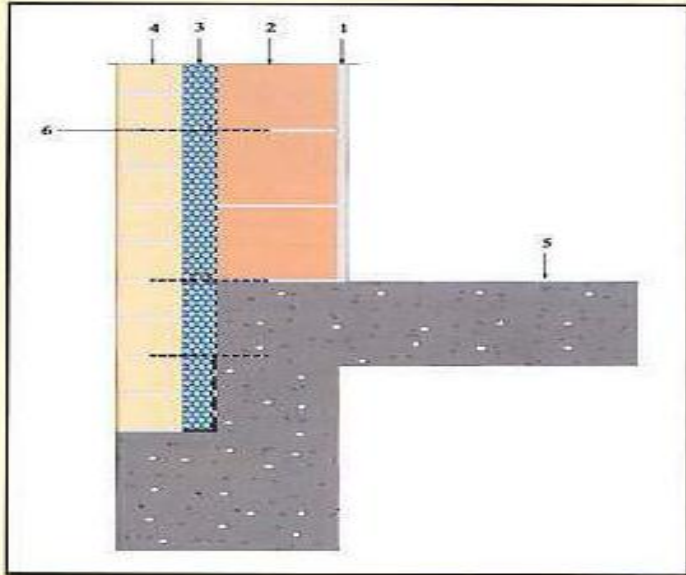
### MEDICAL

ATTENTION. Remove and wash contaminated clothing.

- If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed,

SEEK IMMEDIATE MEDICAL ATTENTION.

Read Material Safety Data Sheet before using this product.



5. Concrete slab.

6. Wall ties.

#### Exterior Insulation

Exterior Insulation is the most efficient way of thermally insulating building due to the fact that it is not interrupted at structural elements like columns, beams and slabs which create thermal bridges if uninsulated. Exterior insulation can be installed in two ways:

1) Behind mechanically fixed marble or granite panels. Thermal insulation boards shall be

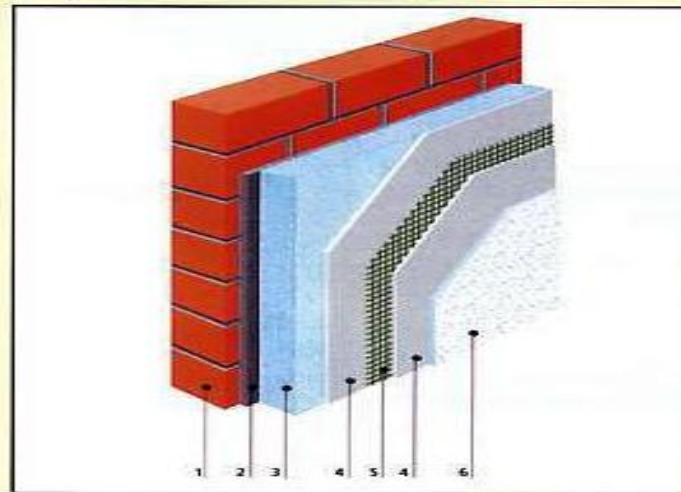
fixed to external face of walls using either plastic dowel with 50 mm diameter disc head or with compatible solvent free adhesive.

2) As part of a complete Exterior Insulation and Finish System (EIFS) comprising:

- a) Polymer modified base coat with fiberglass reinforcement fully embedded in this coat.
- b) Acrylic or Silicone base finish Stucco coat.

System by **Sto of Germany** and offered on turnkey basis by **The Arabian Chemical Company (Polystyrene) Ltd.** This system is a completely crack free finish.

## System Components



Properties of Styrofoam Products<sup>1</sup>

Property (Typical)	Standard	Unit	Roofmate <sup>®</sup> Roofmate SL <sup>1</sup>	Wallmate <sup>®</sup> CW-TG	Floormate <sup>®</sup> 500/700	Styrofoam <sup>®</sup> SM-TG	Styrofoam <sup>®</sup> HD 300-SL
Density, min.	DIN 53420 ASTM D 1622	kg/m <sup>3</sup> lb/ft <sup>3</sup>	32 - 35 2 - 2.2	26 - 28 1.6 - 1.7	38 / 45 2.4 / 2.8	30 1.9	45 2.8
Thermal conductivity <sup>2</sup> at 10°C (50 F) mean temperature of test	DIN 52612 DIN 52616	W/m • K	0.028	0.029	0.027 / 0.026	0.029	0.026
mean temperature 23.9 C (75 F)	ASTM C 177-97 or ASTM C 518-98	Btu • in/ft <sup>2</sup> • h • F	0.20	0.21	0.19 / 0.18	0.21	0.18
Compressive strength at 10% deflection	DIN 53421 ASTM D 1621-95	kPa psi	300 43	210 30	500 / 700 70 / 100	250 36	700 100
Water absorption <sup>3</sup> by submersion	DIN 53428 ASTM D 2842 (± 1% by vol. precision)	% by vol. % by vol.	0.2 ≤ 1	0.2 ≤ 1	0.2 < 1	0.2 < 1	0.2 < 1
Water vapour diffusion resistance factor <sup>4</sup> μ	DIN 52615	μ	100 - 200 <sup>5</sup>	80 - 150	150 / 220	100 / 220	150 / 220
Water vapour permeability	ASTM E 96-00	Perm-inch	0.4 - 0.6	1.0	0.6 / 0.4	0.6	0.4
Capillarity			none	none	none	none	none
Heat stability/compressive creep <sup>6</sup>	DIN 18164	20 kPa, 80°C Type 2.8 psi, 176°F 40 kPa, 70°C Type 5.6 psi, 158°F	WD	W	WD	WD	WD
Linear coefficient of thermal expansion and contraction (Heating soaking conditions)	DIN 52328	°C °F	70 • 10 <sup>-4</sup> 39 • 10 <sup>-4</sup>	70 • 10 <sup>-4</sup> 39 • 10 <sup>-4</sup>	70 • 10 <sup>-4</sup> 39 • 10 <sup>-4</sup>	70 • 10 <sup>-4</sup> 39 • 10 <sup>-4</sup>	70 • 10 <sup>-4</sup> 39 • 10 <sup>-4</sup>
Irreversible dimensional variation (Result of laboratory test with temperature changes up to 60°C (140 F))	—	%	< 0.2	—	< 0.2	—	< 0.2
Fire classification <sup>7</sup> (Germany)	DIN 4102	Building material class	B2 (difficult to ignite)	B2	B2	B2	B2
Underwriters Laboratories (UL) classification according to ASTM-E 84 Standard Test Method for Surface Burning Characteristics of Building Materials under designation ASTM C 578-95	Flame spread Smoke developed For max. 4 ppt density and 4" max. thickness.		5 165	5 165	5 165	5 165	5 165

1-7 For explanations see pages 13, 14 & 15.

8. Thickness related - the thinner the product, the higher the resistance factor (μ)

<sup>1</sup>Trademark of The Dow Chemical Co.





## Technical Data

### 1. Properties

The properties of **Styrofoam\*** products shown on page 12 are typical values obtained by ASTM, DIN and other suitable testing procedures. These values are based on a vast number of audit data over the whole product thickness range compiled over an extensive period of time. Some applications may require special emphasis on a particular foam property. In those cases, adequate safety factors must be provided.

### 2. Thermal conductivity

The thermal characteristics of plastic foams depend mainly on the thermal conductivity of the cell walls and the cell gas, as well as radiation and convection.

The cell gas is the most significant factor in determining the overall heat transfer characteristics. The thermal conductivity of some plastic foam will vary due to changes in the composition of the cell gas with time. The change in the cell gas composition is generally called "ageing".

**DOW** recommends that long-term aged thermal conductivities should be used for design purposes.

The thermal conductivities quoted in this brochure are tested at 10°C (50°F) according to DIN 52612 & 52616 and at temperature of 24°C (75°F) according to ASTM C-177-97 & C-518-98.

Since, in hot climate areas the ambient air and external building surface temperatures are higher than in Europe, thermal conductivities for an ageing temperature of 38°C (100°F) should be taken into account.

In addition to the product specific parameter of

the change of the thermal conductivity of plastic foams, there are also two other important influencing factors:

A. Mean temperature

B. Water absorption (see pages 14 and 15) and see current test method for comments.

There are still serious problems to be solved before full implementation of ASTM-Methods (C177-97 and C 518-98) becomes practical. Therefore, traditional methods are still being used by the industry to determine the thermal resistance of thick, low-density insulation.

### 3. Compressive Strength

The compressive strength of thermal insulation materials is determined by short-term standard test methods. The data given in the table refer to a deflection of 10% or yield value within 10% deflection. **For structural applications involving continuous high compressive load (parking decks and cold stores), non-uniform loads or high temperature, provide an adequate safety factor or design stress levels to minimize deformation of the foam board with time.**

The compressive strength data have been generated at a temperature of 24°C (75°F). At higher temperatures, these values are reduced. For example, the short-term compressive strength of **Roofmate\*** at 40°C (104°F) is reduced by approximately 10%, but the longer term deformation of **Roofmate\*** at 40°C is increased at a higher rate compared to the test temperature of 20°C (68°F). See below deformation under load versus time).

The mechanical properties will not be affected adversely at lower temperatures down to -40°C

## Glass Fiber Mesh

### Reinforcing Mesh

Wide-mesh glass fabric

Reinforcing Mesh is a wide-mesh glass fabric. It is used to reinforce 1 Exterior Basecoat / UBI Exterior Basecoat – white and Joint Filler and Skim Coating – white (exterior ceiling applications only).

Reinforcing Mesh

#### Material characteristics

Weight/unit area approx. 160 g/m<sup>2</sup>

Mesh size 5 x 5 mm

Initial tear strength approx. 1500 N/5 cm

Thickness ca. 0.8 mm

Width 100 cm

Length 50 m

Colour light blue

#### Converge

Approx. 1,10-1,15 m<sup>2</sup> per m<sup>2</sup> plastered surface

Working time

Wall area approx. 3-4 minutes/m<sup>2</sup>

Ceiling area approx. 4-5 minutes/m<sup>2</sup>

#### Method of delivery/storage

100 cm wide rolls x 50 m long

30 Rolls / Pallet

Store in a dry place and protect from moisture.

from irregularities. Place reinforcing strips of ubi Reinforcing Mesh approx. 30 x 50 cm diagonally from the corners of all building openings. The strips must start directly from the corners beneath the actual fabric layer. Then embed the Reinforcing Mesh horizontally over the full surface, keeping it free of folds, close to the surface and with 10 cm joint overlaps.

For exterior ceiling application apply ubi Joint Filler and Skim Coating – white at least 3-5 mm thick, spread to achieve a flat surface free from irregularities. Then embed the AQUAPANEL1 Reinforcing Mesh over the full surface, keeping it free of folds, close to the surface and with 10 cm joint overlaps.

For plaster layers < 1 mm thick or for felted surfaces or those to be painted, a 33 cm wide additional reinforcing strip of ubi Exterior Reinforcing Tape is required over the board joints. The ubi Tape (10 cm) can then be omitted.

Processing

Apply Exterior Basecoat 5-7 mm thick or ubi

Exterior Basecoat – white 4-5 mm, spread to achieve a flat surface free

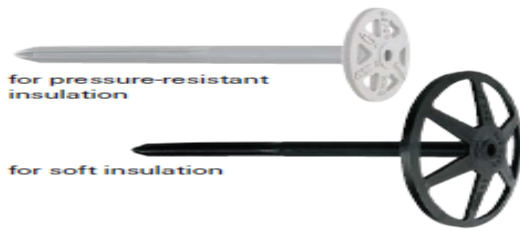


# Insulation support nail

280 INSULATION FIXINGS

## Insulation support DHK

### OVERVIEW



for pressure-resistant insulation

for soft insulation

Insulation support DHK 45, plate-ø 45 mm

Insulation support DHK, plate-ø 90 mm

#### Suitable for:

- Concrete
- Natural stone with dense structure
- Solid brick
- Solid sand-lime brick
- Solid block made from lightweight concrete
- Aircrete
- Vertical perforated brick
- Perforated sand-lime brick



#### For fixing of:

- Soft and pressure-resistant insulating material, e.g.
  - Glass wool
  - Rock wool
  - Polystyrene
  - PU panels
  - Foam glass
- Light building boards made of wood wool
- Coir matting
- Cork boards

### DESCRIPTION

- Impact-resistant plastic insulation fixing.
- When driven in, the fixing grips the hole walls by means of its rough profile.

#### Advantages/benefits

- Small min. anchoring depth reduces the amount of drilling.
- Simple and quick hammer-set installation saves work.

- Flexible ribs in the disc for continuous pressure of the thermal insulation.
- No buckling of the shank.
- No additional screws or nails.
- Different plate sizes for various applications.
- Due to black colouring the DHK does not stand out on clad insulating material.

### INSTALLATION

#### Type of installation

- Push-through installation

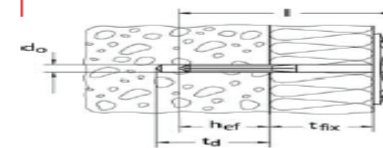
#### Installation tips

- Temperature range when installed: - 40° C to + 80° C



### TECHNICAL DATA

Type	Art. No.	ID	drill ø		min. drill-hole depth for through fixings		effect. anchorage depth		anchor length		max. usable length		qty. per box
			d <sub>0</sub> (mm)	d <sub>1</sub> (mm)	t <sub>0</sub> (mm)	t <sub>1</sub> (mm)	t <sub>01</sub> (mm)	l (mm)	l <sub>fix</sub> (mm)	l <sub>max</sub> (mm)			
DHK 40	80937	2	8	8	35	35	20	85	40	250			
DHK 60	80938	9	8	8	35	35	20	85	60	250			
DHK 80	80939	6	8	8	35	35	20	105	80	250			
DHK 100	80940	2	8	8	35	35	20	125	100	250			
DHK 120	80941	9	8	8	35	35	20	145	120	200			
DHK 140	80949	5	8	8	35	35	20	165	140	200			
DHK 45/40	80992	4	8	8	35	35	20	85	40	250			
DHK 45/60	80993	1	8	8	35	35	20	85	60	250			
DHK 45/80	80994	8	8	8	35	35	20	105	80	250			
DHK 45/100	80995	5	8	8	35	35	20	125	100	250			



### LOADS

#### Recommended loads $N_{REC}$ and mean ultimate loads $N_U$ [kN].

Substrate	$N_U$	$N_{REC}$
Concrete ≥ C12/16	0.24	0.03
Solid brick Mz 12	0.22	0.03
Solid sand-lime brick KSV 12	0.24	0.03
Perforated sand-lime brick KSL 6	0.20	0.03
Vertical perforated brick HZ 12	0.12	0.02
Aircrete G2	0.13	0.02

### FIXING PRINCIPLES

In detail: The general principles for installation, the correct drilling procedure and much more on page 26.

## **ACRYLIC EMULSION PRIMER**

### **Product description**

Acrylic Emulsion Primer is an acrylic copolymer based alkali resistant primer seale

### **Recommended use**

To be used for priming exterior cement plaster and concrete substrates. May be used for internal cement plaster, concrete substrates.

### **Application data**

**Mixing ratio (volume)** Single pack.

**Thinner/Cleaner** Water

**Guiding data airless spray**

**Pressure at nozzle** 140 - 190 kg./cm<sup>2</sup> (2100 p.s.i.)

**Nozzle tip** 0.021" - 0.027"

**Spray angle** 65° - 80°

**Filter** Check to ensure that filters are clean.

### **Drying time**

Drying times are generally related to air circulation, temperature, film thickness and number of coats, and will be affected correspondingly. The figures given in the table are typical with:

\* Good ventilation (Outdoor exposure or free circulation of air)

\* Typical film thickness

\* One coat on top of inert substrate

\* Relative humidity 70%

**Substrate temperature** 10°C 23°C 40°C

**Surface dry** 6 h 3 h 1 h

**Through dry** 12 h 5 h 3 h

**Dry to recoat, minimum** 1 6 h 3 h 1 h

**Dry to recoat, maximum** 2,3

1. Recommended data given for recoating with the same generic type of paint.

2. In case of multi-coat application, drying times will be influenced by the number and sequence and

by the total thickness of previous coats applied – reference is made to the corresponding system

3. The surface should be dry and free from any contamination prior to application of the subsequent coat.

The given data must be considered as guidelines only. The actual drying time/times before recoating may be shorter or longer, depending on film thickness, ventilation, humidity, underlying paint system, requirement for early handling and mechanical strength etc. A complete system can be described on a system sheet, where all parameters and special conditions could be included.

### **Typical paint system**

#### **Exterior :**

#### **Acrylic Emulsion Primer 1 coat**

Texo Compound 1 coat

Jotashield, Jotacryl, Durathane or Futura 2 coats

### **Storage**

The product must be stored in accordance with national regulations. The product must be kept in a cool and well-ventilated place, protected from heat and direct sunlight. Containers must be kept tightly closed.

### **Handling**

Handle with care. Stir well before use.

### **Packing size**

1 US G and 5 US G.

Packing may vary from country to country according to local requirements.

### **Health and safety**

Please observe the precautionary notices displayed on the container. Use under well ventilated conditions. Do not breathe or inhale mist. Avoid skin contact. Spillage on the skin should immediately be removed with suitable cleanser, soap and water. Eyes should be well flushed with water and medical attention sought immediately.

**For detailed information on the health and safety hazards and precautions for use of this product, we refer to the Material Safety Data Sheet.**

## Finishing top coat

### HEAVYTEX WITH MARBLE CHIPS

#### Product description

Heavytex is based on special tough, weather resistant acrylic copolymer emulsion, containing coarse rock-hard aggregates of marble chips. It gives a heavy textured decorative and protective finish.

#### Recommended use

It is suitable for exterior and interior use on surfaces such as brickwork, cement plaster, concrete, gypsum board, etc. Due to the thickness and appearance of the coating Heavytex is well suited to covering unevenness and hairline cracks.

#### Film thickness and spreading rate

Minimum Maximum Typical

Film thickness, dry ( $\mu\text{m}$ )

Film thickness, wet ( $\mu\text{m}$ )

Theoretical spreading rate

( $\text{m}^2/\text{l}$ )

1 2 1,5

#### Comments

Heavytex will vary in film thickness from 200 – 3000 microns due to its texture.

#### Physical properties

Colour As per the colour card

Solids (vol %)\*  $68 \pm 2$

\*Measured according to ISO 3233:1998 (E)

#### Surface preparation

The substrate must be sound, clean, dry, free from dust, oil, grease and laitance etc. All traces of release agents must be removed. On chalky and dusty surfaces, all loose material must be removed by stiff bristle brushing.

#### Other surfaces

Apply one coat of Tex Primer if the surface is extremely smooth.

The coating may be used on other substrates. Please contact your local Jotun office for more information.



## Condition during application

The temperature of the substrate should be min. 10°C and min. 3°C above the dew point of the air, temperature and relative humidity measured in the vicinity of the substrate.

HEAVYTEX WITH MARBLE CHIPS Page 1 of 3

## Application methods

Spray Hopper Gun.

Roller Texture Roller

## Application data

Mixing ratio (volume) Single pack.

Thinner/Cleaner Water

## Drying time

Drying times are generally related to air circulation, temperature, film thickness and number of coats, and will be affected correspondingly. The figures given in the table are typical with:

\* Good ventilation (Outdoor exposure or free circulation of air)

\* Typical film thickness

\* One coat on top of inert substrate

\* Relative humidity 70%

Substrate temperature 10°C 23°C 40°C

Surface dry 8 h 4 h 2 h

Through dry 48 h 24 h 18 h

Dry to recoat, minimum 1 48 h 24 h 18 h

Dry to recoat, maximum 2,3

1. Recommended data given for recoating with the same generic type of paint.

2. In case of multi-coat application, drying times will be influenced by the number and sequence and by the total thickness of previous coats applied – reference is made to the corresponding system data sheet.

3. The surface should be dry and free from any contamination prior to application of the subsequent coat.

The given data must be considered as guidelines only. The actual drying time/times before recoating may be shorter or longer, depending on film thickness, ventilation, humidity, underlying paint system, requirement for early handling and mechanical strength etc. A complete system can be described on a system sheet, where all parameters and special conditions could be included.

## Typical paint system

Tex Primer or Acrylic Emulsion Primer 1 coat

### Heavytex 1 coat

Overcoat with Jotashield Topcoats, if a special colour is required. Please refer to the Decorative Sales Department for technical advice.

Other systems may be specified, depending on area of use

HEAVYTEX WITH MARBLE CHIPS Page 2 of 3

### Storage

The product must be stored in accordance with national regulations. The product must be kept in a cool and well-ventilated place, protected from heat and direct sunlight. Containers must be kept tightly closed.

### Handling

Handle with care. Stir well before use.

### Packing size

1 US G and 5 US G.

Packing may vary from country to country according to local requirements.

### Health and safety

Please observe the precautionary notices displayed on the container. Use under well ventilated conditions. Do not breathe or inhale mist. Avoid skin contact. Spillage on the skin should immediately be removed with suitable cleanser, soap and water. Eyes should be well flushed with water and medical attention sought immediately.

For detailed information on the health and safety hazards and precautions for use of this product, we refer to the Material Safety Data Sheet.