Paneltack HM

BONDING SYSTEM FOR DEKTON PANELS

ADVANTAGES

- Reliable blind fixing method
- Simple and fast mounting
- Optimal tension distribution

PRODUCT

Paneltack HM is a moisture curing elastic adhesive based on SMP (Silyl Modified Polymer). Paneltack HM is solvent- and isocyanate free.

APPLICATIONS

Bonding of Dekton façade panels with an ancillary glass fibre mesh on the back for:

- Exterior facade- and interior wall cladding
- Roof eaves
- Wall covering panels in porches

DEKTON

Dekton is a new large format product consisting of a mixture of raw materials that react to high temperatures to obtain a slab with unique technical and aesthetic characteristics. Sintered quartz panels designed by Cosentino Spain. Fibremesh has been glued on the backside of the panels. Available in several thicknesses 8, 12, 20 and 30 mm.
Because the panels are bonded over a large surface without locally weakening the panels (such as undercut drill holes or grooves), bonding with Paneltack HM is ideal for 8 (or 12 mm) thin panels. Maximal size 3200 x 1440 mm.

DEKTON FAÇADE PANELS

More information can be found on www.cosentino.com

PANELTACK HM FEATURES

- Durable elasticity and high mechanical strength
- Optimal tension distribution
- KOMO-certified
- Good moisture- and weather resistance
- Simple and quick mounting

BOSTIK BONDING SYSTEM

The bonding system consists of:

Paneltack HM	elastic adhesive.
Cleaner I	for pre-treatment of the backside of the Dekton panels
Prep M	primer for metal support construction (aluminium or galvanised steel)
Foamtape	for the initial bonding of the panels and to guarantee a sufficient mass.

INFORMATION FOR THE CONSTRUCTION DESIGNER

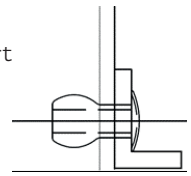
KOMO ATTESTATION-WITH-PRODUCTCERTIFICATE SKG.0176.7094

For calculations the values can be used as mentioned in table 1.1. For constructional calculations conforming to the Guideline BRL 4101 part 7, a safety factor 4 for the tensile strength and a safety factor 10 for the shear strength were taken into account. The width of an adhesive bead is approx.13 mm.

WEIGHT LOAD OF PANELS

An 8 mm thick panel weighs approx. 21½ kg/m², a 12 mm panel approx. 32 kg/m². For an easy application it is advised to use two small aluminum brackets on which the panels can be positioned and placed. As these brackets support the panel permanently, the adhesive bond is hardly or not subjected to shear and creep. Bostik Foamtape is applied as a distance holder but also prevents the panels from tipping over.

Example
Aluminum bracket, L-support profile.
Thickness 2 mm.
Width and height 20 mm, protrudes approx. 8 mm.
Attached with suitable blind rivet.



WINDLOADS

See EN 1991-1-4 (Eurocode 1) and national annexes. Although for normal applications the demands for wind loads are easily met, we advise to consult local notified bodies and/or design engineers. Demands and requirements concerning wind loads may differ within the European countries.

TABLE 1.1:

SUPPORT CONSTRUCTION	PRIMER SUPPORT CONSTRUCTION	PRETREATMENT DEKTON PANEL	CALCULATION VALUE SHEAR STRENGTH N/MM²	CALCULATION VALUE TENSILE STRENGTH N/MM²	MAX. ELASTIC DEFORMATION MM
Metal	Prep M	Primer MSP	0.18	0.4	3

FIRE BEHAVIOUR
With Paneltack HM class B, s1-d0 according to EN 13501-1 can be obtained.

MAXIMUM PANELSIZE
Paneltack HM is highly elastic therefore possible deformation of the panels can be absorbed in the adhesive layer. When mounting the panels a maximal occurring (diagonal) deformation less than 0.5 mm/m[1] must be taken into account. According to the Guideline BRL 4101 part 7 the maximal elastic deformation, which still can be absorbed in practice by the standard Paneltack HM system, may not exceed 3 mm. This means that full size may be bonded.

REMARK
Panels must be even and flat prior to bonding. In this aspect large panels are more critical than small panels, therefore extra care regarding correct handling and storage is inevitable.

SUPPORT CONSTRUCTION: DIMENSIONS AND DISTANCES
The minimal width of supports in the support construction depends on the function of the supports:

		aluminium
I.	support for joints	100 mm
II.	end- and intermediate supports	40 mm

See detailed drawings.

CENTRE-TO-CENTRE DISTANCES BETWEEN VERTCAL SUPPORTING PROFILES
Maximal centre-to-centre distances between the supporting profiles; 700 mm. The correct centre-to-centre distances of the support structure are determined by the extreme wind pressure which is influenced by a number of correction factors such as building shape, terrain category, relief and location factors. Depending on the expected wind load and any other loads, this must be determined by a construction engineer. With high buildings or a higher wind load (or other kind of loads) this maximum spacing decreases. It also decreases for façade panels on the ground floor level. The width of the peripheral zone is at least 1 m from the corner of the building and must be further determined on basis of the applicable national standards and regulations. The maximum distance of the support structure may never be higher than stated in the table below:

Maximum centre-to-centre distance vertical supports in (mm)*			
Terrain category	Building height (m)	Middle area facade	Edge area and single span
I to IV (land)	0-20 M	700 mm	500 mm
I to IV (land)	20-40 M	600 mm	500 mm
0 (coast)	0-40 M	500 mm	400 mm

* This is an indicative table only. The distances must be determined per project depending on terrain categories with the known wind pressure eg zone 0 (coast) and the dimensions of the slabs.

SUPPORT CONSTRUCTION: VENTILATION
The support battens or profiles must only be mounted vertically. Behind the panels there has to be an open ventilated cavity of minimal 20 mm. Ventilation openings are envisaged, as a minimum, at the building base point and at the roof edge with cross sections of at least 50 cm² per linear metre.

SUPPORT CONSTRUCTION: CHOICE OF MATERIAL
Dry and smooth (galvanized) steel or aluminum. These metals must be rustproof and conform to relevant standards.

The aluminum profile has a minimum thickness of 1½ mm. AW-6060 or AW-6063 according to EN 755-2. The aluminum maybe anodized. When mounting aluminum profiles, the thermal expansion of aluminum must be accounted for by using slotted holes enabling the profiles to work freely. The length of the aluminum profiles is limited to 6 m in order to avoid large expansions. The maximum expandable part of the profile is 3.5 m from fixed attachment point to profile end. A joint between the aluminum profiles should always coincide with a joint between the panels.

JOINT WIDTH
Typical panel joint is 8 mm

TABLE 1.2

CONSUMPTION INDICATION PER 100 M²	UNITS	PACKAGING
Foamtape	12	25 metre roll
Paneltack HM	50	290 ml cartridge
Prep M (aluminium)	3	500 ml tin
For the backside:		
Cleaner I	1	2500 ml jerrycan

Length of adhesive bead per cartridge: approx. 6½ m.

APPLICATION CONDITIONS
The cladding panels can be bonded indoors (in a factory) or on the building site. The following conditions apply:
- Do not pre-treat or bond in case of precipitation.
- Do not pre-treat or bond in case of high air humidity for instance during dense fog.
- Avoid condensation on both the panels and support construction: the dew point must be 3°C above substrate temperature.
- Apply between +5°C and +30°C.

INFORMATION FOR THE APPLICATOR

METHOD OF USE IN STEPS

The panels must be flat prior to bonding. The surfaces to be bonded must be clean, dry, dust- and grease free.

1. PRE-TREATMENT SUPPORT CONSTRUCTION

The support construction must be primed before or after mounting. The primer can be applied both in- and outdoors. Use Prep M (or Prep G-Plus) for metal. One (continuous and closed) coat of primer is sufficient. Residues of primer should not be used. Avoid contamination of the support construction with dust and grease after.

Metal support construction: Apply Prep M straight from the tin on a clean, lint free and pigment free cloth or tissue paper. Firmly rub the metal with the primer-soaked cloth. Minimal drying time after application 10 minutes. Replace cloths regularly by new ones.

2. PRE-TREATMENT PANEL

Check the panels in advance to see if they are dust free and if not remove loose dust. Clean the bonding area with Cleaner I. Apply Cleaner I on a clean, lint free and pigment free cloth. Firmly rub the backside with the cleaner-soaked cloth. Replace the cloth when dirty. Minimal drying time after application 10 minutes.

3. APPLICATION OF FOAMTAPE

Once the primer and cleaner have dried, Foamtape is applied vertically to the support construction without any interruption. Press Foamtape firmly onto the support construction and cut it with a sharp knife. When deciding on the correct position and length of the tape also bear in mind the dimensions and function of the supports, the dimensions of the panels and the necessary space for the adhesive. Do not immediately remove the protective layer after application of the Foamtape. (See step 5).

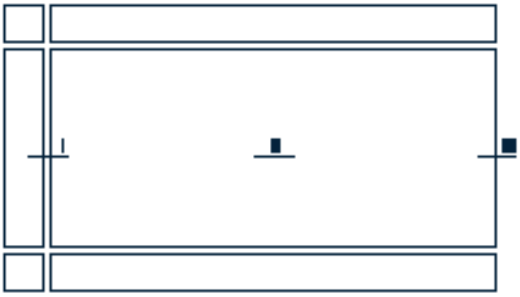
4. APPLICATION OF ADHESIVE WITH SPECIAL NOZZLE

Apply Paneltack HM only vertically and without interruption. Use a hand- or an air pressure caulking gun. A special V-shaped nozzle has been packed with every cartridge Paneltack HM. This enables to apply a triangular adhesive bead with a width and height of 9 mm. Using this special nozzle prevents the enclosure of air bubbles and unnecessary loss of adhesive. Opposite the V-cut one can cut the nozzle obliquely.

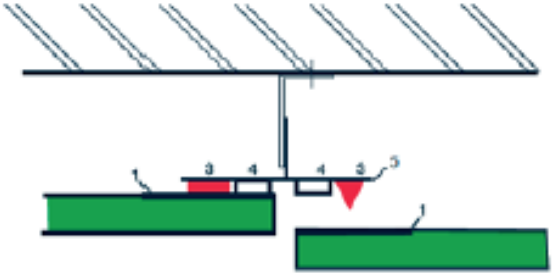
5. PLACING THE PANEL

Now remove the protective layer from the Foamtape. Apply the cladding panel within 10 minutes after the application of the Paneltack HM adhesive. It is advised to use two small aluminum brackets on which the panels can be positioned and placed. Correction is still possible until the panel touches the Foamtape. For easier handling a glass suction clamp can be useful. Once the panel is positioned correctly, the panel must be pressed down by gently rubbing over the entire length of the Foamtape. Avoid that the foam tape is pressed together. Now it is no longer possible to correct the panel position. See the detail drawings. Avoid contamination of the front side of the panels with primer or adhesive. Should this nevertheless occur then immediately remove or scrape off most of the uncured product and then remove residues with Liquid 1 using a clean, lint free and pigment free cloth or tissue paper. Please note however that it will not always be possible to remove residues without leaving stains. Cured primer and adhesive can only be removed mechanically.

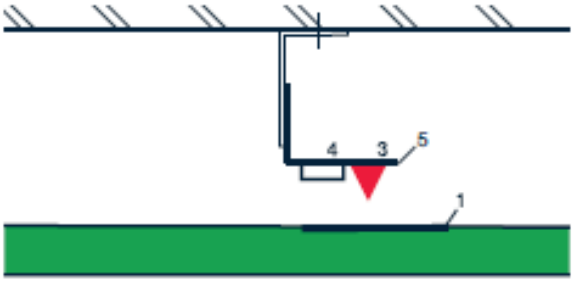
FRONTVIEW



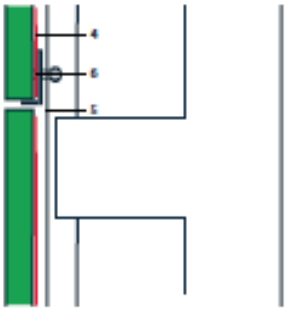
I. SUPPORT FOR JOINTS –ALUMINUM SUPPORT



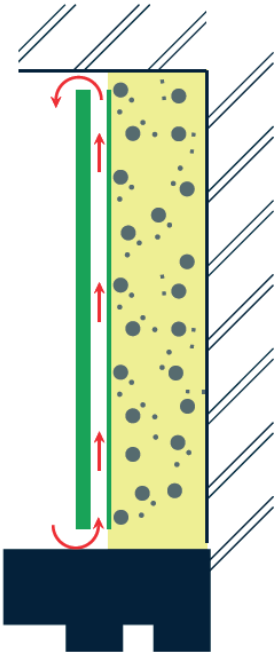
II. INTERMEDIATE SUPPORT – ALUMINUM



SIDE VIEW ALUMINUM SUPPORT



1. Cleaner I
2. Prep M
3. Paneltack HM
4. Foamtape
5. Supporting bracket
6. Blind rivet



Schematic drawing of ventilation.

PANELTACK HM	
Description	1-component (moisture curing, elastic adhesive based on SMP (Silyl Modified Polymer)
Specific gravity	1.4 g/ml
Skin formation (start)	15 minutes (at 20°C/50%RH)
Shore A	approx. 55
Shear strength	1.80 N/mm²
Tensile strength	2.25 N/mm²
Max. allowed elasticity	3.0 mm
Application temperature	+5°C till +30°C
Temperature resistance	-40°C till +90°C
Packaging and code	290 ml cartridge, 30132201
	600 ml sausage, 30132181
Colour	black
Storage stability	store cool and dry between +5°C and +30°C. Can be stored for at least 12 months in unopened packaging. Opened packaging has limited shelf life. See packaging code: B(est) B(efore) mm/yy

CLEANER I	
Application	pre-treatment of Dekton panel
Minimal drying time	10 minutes
Application temprature	+5°C till +30°C
Dry contents	0 %
Specific gravity	0.79 g/ml
Flash point	12 °C
Colour	transparent
Packaging and code	2500 ml jerrycan, 30024054
Storage stability	Store cool and dry between +5°C and +30°. Can be stored for at least 12 months in unopened packaging. See packaging code. B(est) B(efore) mm/yy.

PREP M	
Application	pre-treatment of metal support construction
Minimal drying time	10 minutes
Application temprature	+5°C till +30°C
Specific gravity	0.76 g/ml
Flash point	<21°C
Colour	light yellow / transparent
Packaging and code	500 ml tin, 30022110
Storage stability	store cool and dry between +5°C and +30°C. Can be stored for at least 12 months in unopened packaging. Opened packaging has limited shelf life. See packaging code B(est) B(efore) mm/yy.

FOAMTAPE	
Discription	two-sided self adhesive foam tape with a protective layer on one side
Application	for initial bond of the panel and a spacer for a sufficient mass and thickness of the adhesive bead
Specific gravity	approx. 60 kg per m³
Shear strenght	approx. 0.27 N/mm²
Tensile strenght	approx. 0.27 N/mm²
Packaging	25 metre roll
Application temperature	+5°C to +35°C
colour	black
Article code	30182771
storage stability	Store cool and dry between +5°C and +30°. Can be stored for at least 18 months in unopened packaging.

FURTHER INFORMATION

The following publications are available on request:

- Material Safety Data Sheets (MSDS) via http://bostiksds. thewercs.com/

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