BÜHNEN
ADHESIVE SYSTEMS

Hot Melt
&
Glue Applicator Systems
for the
Concrete Industry

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The Application

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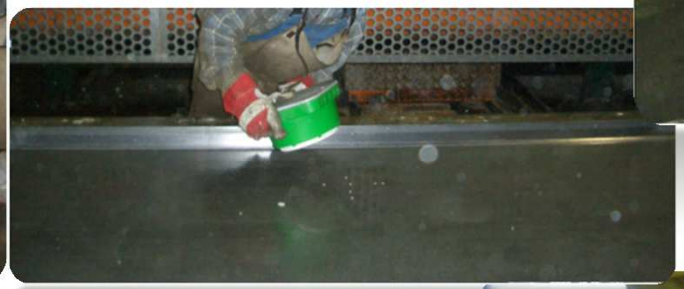
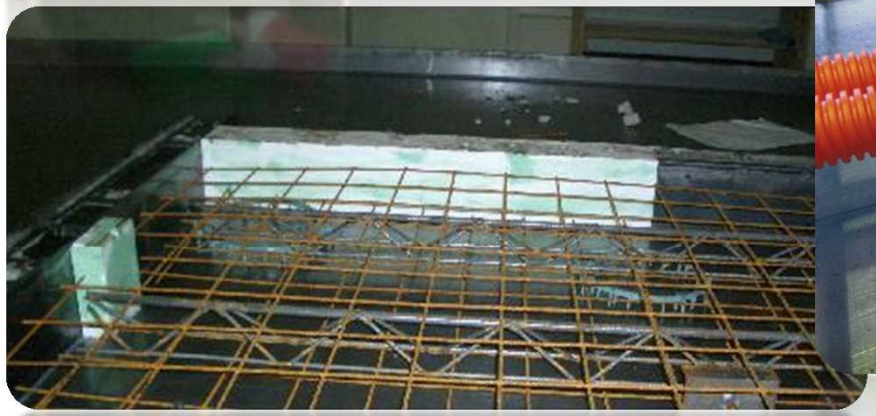
Fixing foam and plastic parts





Fixing sockets and other components
for electrical installations

The Application

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Hot Melts for Precast Concrete Manufacturing

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Hot melt for solvent-based release agents:

BÜHNEN Product	Way of Application		Application		Temperature of environment	
	Bead	Spray	first applied to part (spacer etc.) (generally longer open time required)	first applied to steel formwork (generally shorter open time required)	low (e.g. in winter time)	medium/high (e.g.in summer time)
0090.2 (2127)	+	o	o	+	o	+
0715 (2216)	o	+	o	+	o	+
0524 (2413)	o	+	+	+	+	o

Hot melt for water-based release agents:

BÜHNEN Product	Way of Application		Application		Temperature of environment	
	Bead	Spray	first applied to part (spacer etc.) (generally longer open time required)	first applied to steel formwork (generally shorter open time required)	low (e.g. in winter time)	medium/high (e.g.in summer time)
2097 (2635)	o	+	+	o	o	+
1694	+	o	o	+	+	o

+ fits very well, to be recommended
o limited suitability, according to manufacturing process

Generally we recommend to run tests under specific circumstances at the manufacturing site. The mentioned specifications are just for a first guidance..

Applying Hot Melt Adhesives in the Precast Concrete Industry

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Hot melt adhesives for the application of water-based release agents (emulsions):

- A variety of influencing factors must be taken into account when using water-based release agents because of the widely known difficulties in bonding to water. Also to be considered is the fact that – dependent on the environmental conditions at a plant water evaporates faster or slower.

Optimum production conditions for the use of water-based release agents:

1. Spraying the release agent **after** bonding of components on the steel formwork
   When applying release agent before fastening of components:
   a. Sufficient evaporating time before applying adhesive to the releasing agent (guide value approximately 8-10 minutes)
   b. Remove any release agent residue before fastening the component to the metal plate
2. Bead application with a bead thickness of approximately 5-6 mm
3. Hall temperature approximately 18°C - 20°C
4. Temperature of the metal plate before the release agent is applied approximately 35°C - 40°C

Important:
The release agent should sufficiently be evaporated until it gets into contact with the hot-melt adhesive. This could be supported by a warm metal plate and an adequate hall temperature. Compared to a spray application the application of a bead helps to improve the evaporation of the water in the release agent thanks to the higher adhesive (temperature) energy in the bead.

When applying hot melt in the concrete industry a variety of issues can influence the manufacturing process. For selecting the right adhesive it is very important to know all process parameters at a precast concrete plant which can be different from site to site.

We recommend to run tests with our products under the specific envoronmental conditions at the manufacturing site.. All data shown in this presentation are to be considered as a rough estimation.

BÜHNEN Hot Melts for Precast Concrete Production

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Type of release agents	Hot melts for solvent-based release agents			Hot melts for water-based release agents	
BÜHNEN hot melt type	**0090.2**	**0715**	**0524**	**2097**	**1694**
Features	**For conventional, solvent-based release agents:** universal, excellent adhesion to metal formwork, rather applied in warmer environment,	**For conventional, solvent-based release agents:** very good for spraying, sound heat resistance, for warm environment	**For conventional, solvent-based release agents:** long open time, very well for spraying, good cold flexibility, rather to be used in cold environments	**Especially to be applied with water-based release agents with antifreezing and anticorrosion compounds:** very good for spraying,	**Works particularly with standard water-based release agents:** excellent adhesion properties, well removable from formwork, good cold flexibility
adhesive basis*	PO	PO	PO	PO	EVA
viscosity in mPas / at °C	2.600/160°C	2.500/180°C	4.500/180°C	6.000/160°C	2.300/160°C
density in g/cm³	0,98	0,98	0,98	0,98	0,98
colour / apperance	light yellow	light brown	light brown	yellow	white
softening point in C° by ring and ball	110	135	100	115	85
heat resistance in °C according to WPS 68, shearload 100 g/cm² bonded surface	60	70	60	55	50
cold flexibility in °C	5	-5	-30	-5	-20
application temperature in °C	160-180	180-190	160-180	160-180	150-170
open time in seconds**	90	120	480	150	60
setting time in seconds**	90	90	600	60	60
hardness Shore A	45	50	43	30	35
for spraying	yes	yes	yes	yes	yes
form of delivery***	4,5	1,4,5	5	5	4

* adhesive base:
EVA = Ethylenvinlyacetat (BÜHNEN code A)
PO = Polyolefin (BÜHEN code B)

** The values listed here are information according to internal BÜHNEN

*** forms of delivery:
1 = slugs, diameter ca. 42mm
4 = granular/pillows in bulk
5 = 500g-4kg-blocks/-meltpacks

with water-based release agents of FUCHS Lubritech (SOK-AQUA

FUCHS LUBRITECH

Content of this table is not legally binding and subject to changes without notice. We recommend to test our products under your own specific conditions at your manufacturing site.

Hot Melt Applicator Systems

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HB 710

Pneumatic Handheld Hot Melt Applicator System

The Smallest Hot Melt Bulk Tank Applicator System Worldwide

- Very versatile ergonomically designed hand gun for nearly every application
- One of the most powerful and successful hand-held pneumatic hot melt applicators
- Processes all hot melts with diameters up to 43mm and granulates
- Spray and dot/bead versions as well as a broad range of different nozzles available
- High melting capacity of up to 3,2kg/h
- Temperature is microprocessor controlled (+/- 1°C)
- Low energy consumption and extended life span of hot melt due to automatic temperature reduction (stand by)
- Digital display and temperature control integrated in hand hold
- Single-handed bayonet tank closure for very easy refill

Hot Melt Applicator Systems

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HB 5010

Hot Melt Bulk-Tank Applicator System with Gear Pump

The Strongest Gear Pump Unit of its Class

Powerful

Application of Big Quantities

- ✓ High Melting Power (of up to 4.5kg/h)
- ✓ Highest Melting Rate in Class of Gear Pump driven units with 5-Litre-Tank

New Geometry of Tank

Smoother Surface

Less Corners/Edges

Repositioning of Pump

- ✓ Better Cleaning
- ✓ Minimized Burns of Hot Melt
- ✓ Faster Melting
- ✓ Optimized Feed of Hot Melt
- ✓ Reduced Wear of Gear Pump

Flexible

Many Installation Possibilities

- ✓ Handgun is 360° rotatable
- ✓ Many possibilities for connecting hoses
- ✓ For manual and automatic applications
- ✓ Ni120 or Pt100 possible
- ✓ Low Weight of 35kg

Benefits

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With the usage of hot melt adhesives in the concrete industry the manufacturing process could be optimized

Saving Time

- ✓ **Reduced time consumption in fast and secure fixing of components on the steel formwork (e.g. plastic or styrofoam spacer)**
- ✓ **Parts can easily be removed from the moulds without residues**
- ✓ **Quick and safe application without using magnets or adhesive tape**

Saving Money

- ✓ **Reduced processing time**
- ✓ **Low consumption of hot melt**

When using hot melt adhesives in the concrete industry a lot of influencing factors have to be considered. For selecting the right adhesive the knowledge about all parameters of the manufacturing process at the production site is very important. These can be different from site to site and are a crucial driver for choosing the right adhesive!

We recommend to run tests with our products under your own specific conditions at your manufacturing site.. All data shown in this presentation are to be considered as a rough estimation.