



Den Braven



Influence of temperature in storage and/or transport

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Influence of temperature in Storage and/or transport

In the technical documentation for all Den Braven's products the minimum shelf life after production is given as between + 5°C and +25°C. When products are stored in higher temperatures this will shorten their shelf life. A maximum temperature of + 45°C can be maintained. Above this temperature problems might occur. For instance, too much pressure may build up in canisters of PU foam. In neutral silicone sealants the chemical reactions can be changed.

Temperatures below + 5°C until ca. - 5°C do not directly cause problems. Below - 5°C dispersion products can freeze. Most dispersion products like Zwaluw Acryl-W can be thawed once frozen, and be used normally. In silicone sealants that contain acid, the cross linker can crystallize at temperatures below - 5°C. By warming the sealant to above + 5°C this crystallization can be reversed.

Influence of temperature during application

Influence of material in the packaging

Generally, materials will be thinner at higher temperatures and thicker at lower temperatures, making the required pressure during application dependant on the temperature. Exceptions to this are silicone based products, which are almost totally indifferent to temperature. Thinner products normally do not cause any problems during application. At lower temperatures some products can be more difficult to process, eg 1-component hybrid sealant or PU-sealant. We recommend storing these products in a warm place. Quick heating on the construction site in warm or hot water is not recommended, as the cartridge itself can reach + 50°C to + 60°C while the sealant within is still cold and rigid. Use in air pressured guns can cause problems, as the hot cartridge can deform allowing air in the cartridge. This air will leave the cartridge together with the sealant, causing many irregularities.

Influence of temperature during application

All sealants can be processed from + 5°C. This temperature is given because at lower temperatures condensation or ice can occur on the surfaces. This could make the bonding of the sealant fail. In controlled circumstances some products can be applied below +5°C. Each situation should be individually assessed.

Temperatures up to + 30°C to + 40°C do not cause problems with application. It has to be taken into account that during warm periods all building materials and construction(s) expand, making the joint smaller. When the joints expand later on when temperatures drop, constant pressure will be placed on the sealant, increasing the chance for de-bonding.

For this reason it is not recommended to seal high(ly) operating joints during hot weather, or in full sunlight. Solvent based sealants should not be used in full sunlight, as this can cause blistering of the sealed joint.

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Influence of temperature after application

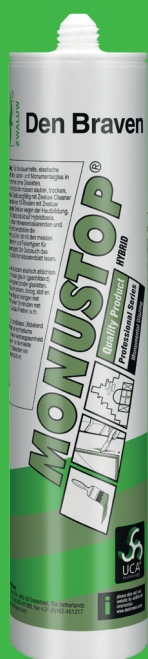
While the sealant is curing (with 1-comp. Moisture cured products this might take up to a few weeks, depending the type and layer-depths) the sealant is too sensitive to too much operation in the joint.

During periods of high temperature fluctuations the joints are exposed to the shrinkage and expanding of building materials. When this happens during curing, in extreme situations the sealant can become deformed, showing cracks or surfaces pressed together in the sealant joint.

When the sealant is completely cured, it's elasticity can be fully utilised. Higher temperatures will not cause many problems. Temperatures as low as - 10°C will make the sealant more rigid, while due to the cold and shrinkage, the joints are at their widest. Maximum pressure is now exerted on the sealed joint.

The exception to this is the silicone based products, being indifferent to temperature, and being as elastic at - 10°C as at + 20°C. This is why mostly neutral silicone sealants with low modulus are used for dilatation joints in facades. Products based on hybrid technology maintain elasticity over a wide range of temperatures.

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