

Technical data sheet

Multiface® has been specially developed for the connection and maintenance of conveyor belts made of rubber, PVC or PU as well as for the bonding of abrasion resistant lining (patent pending). **Multiface®** is even usable for materials such as metal, glass, ceramics, wood, textile and many other plastic materials, when a high strength and permanently elastic gluing with a very thin gap is required.

Multiface® is a reactive adhesive without volatile organic compounds (VOC). On the contact surface with rubber it additionally achieves a unique chemical crosslinking for an adhesive, which corresponds to the process of hot vulcanizing, but starting at room temperature. **Multiface®** can therefore be used as replacement for vulcanizing solution and raw rubber in hot process with a vulcanizing press. For this purpose, a thin layer, as well lower pressure and temperature are fully sufficient to perform a complete vulcanizing. Selected highest-grade raw materials guarantee the usage of **Multiface®** as polymer mixture **without danger for people, environment**, and the possible use even in the **food industry**.

Material	2-component-PU-system with mixing ratio 1:1
Color	Transparent-amber or black (other colors on demand)
Solvents	No solvents, VOC free, organochloride-free, CFC-free and CMR-free Conformed to REACH and graded to RoHs Directive 2015/863/EU Biocompatibility and fulfillment of the medical standard ISO10993 Approved for food contact according to EG 1935/2004 and EU 10/2011
Properties	Reactive glue with curing by polyaddition and with combined solidification mechanism Reaction time, hardness and elasticity scalable Very high-quality product with bio compatible raw material (Made in Germany) Mixture of the two components with re-sealable cartridges and static mixer Particularly safe in handling Simple processing with minimal protective equipment and investment Good tacky in the gel phase Self-leveling (or thixotropic / non-sag and self-extinguishing and antistatic) High tolerance against humidity and dust during processing High static and dynamic strength after full curing Temperature of use: -40°C/-40°F up to +100°C/212°F (short time +120°C/248°F) as splicing material and up to +150°C/302°F as corrosion coating (Multiface 1.5: only +120°C/248°F) Shockproof, wear, aging-, UV- and weather-resistant Excellent resistance against seawater, oils, diesel engine oil, alkalis and good resistance against non-concentrated acids after full curing. Attention: with some rubber compounds as well as with plastics with low surface energy the adhesion has to be checked before every usage. Further information on the respective instructions.
Pack size	In double cartridges 25 g/0.88 oz.; 50 g/1.76 oz.; 200 g/7.05 oz.; 400 g/14.1 oz. or 1.500 g/52.9 oz. (or in barrels for larger quantity).
Yield	The required amount for gluing is approx. 100-300 g/m ² (0.43-1.31 oz./ft ²) on each side depending on the material, the roughness of the surface, the curing speed of the chosen version and the pressing force of the fixing device. The consumption can be higher when filling surface damages, cracks repairs and in spraying applications.
Shelf life	Minimum 1 year in the double cartridges without vacuum foil (6 months for 25 g cartridges). Minimum of 2 years in the double cartridges in vacuum foil. Minimum 1 month after its first use and proper resealing. According to DIN 7716 store dry at temperatures +5°C/41°F to +45°C/113°F. Tip: keep in vacuum bag or in lock bag to extend the storage time!
Safety instruction	No hazardous freight and as an end product do not pose a particular danger to people or the environment. A respiratory protection is therefore not necessary. The wearing of a respiratory protection is only recommended during roughing preparation of the contact surface to prevent breathing dust particles. Gloves or disposable gloves should be principally worn to prevent sticking the skin of the hands but also, because Multiface® may absorb some constituent parts of the conveyor belt or wear protection material, which can then penetrate into the skin. The wearing of safety goggles is mandatory, in order to prevent splashing or gluing in the eye area by hand contact. In case of spraying, it's is mandatory to wear a level 3 chemical protective suit and a blower helmet to prevent sticking of aerosol particles on skin, hair, eyes and respiratory tract. The local safety regulations must be followed strictly.

	Multiface 1.5		Multiface 5			Multiface 20		Multiface 40		
	Normal	FRAS	Normal	Medium	Hard	Normal	Hard	Normal	Hard	Extra hard
Shore hardness	70 ± 5 Shore (A)	70 ± 5 Shore (A)	75 ± 5 Shore (A)	85 ± 5 Shore (A)	95 ± 5 Shore (A)	75 ± 5 Shore (A)	95 ± 5 Shore (A)	75 ± 5 Shore (A)	95 ± 5 Shore (A)	85 ± 5 Shore (D)
Self levelling or thixotropic	x	x	x	x	x	x	x	x	x	x
Recommended main applications	Repair of cracks, rips and surface damages		Step splicing (textile belts)	Wear resistant coating	Pulley lagging	Finger splicing (textile belts)	Pulley lagging (wide surfaces)	Steel cord belts (cover platers)	Steel cord belts (along the steel cords)	Surface coating
	Surface coating Shock-absorbing and non-slip		Surface coating non-slip		Wear resistant lining	Step splicing (wide surfaces)				
Possible applications	Wedge splicing of light duty belts up to 40 N/mm / 228 PIW belt tension		Pulley lagging		Surface coating Anti-caking					
	Step splicing of light duty belts narrow width up to 63 N/mm / 360 PIW belt tension		Wear resistant lining							
Specific weight	1,22	1,22	1,22	1,22	1,22	1,22	1,22	1,22	1,22	1,22
Elongation at break	> 200 %	> 200 %	> 150 %	> 100 %	> 100 %	> 150 %	> 100 %	> 150 %	> 100 %	> 50 %
Typical lap shear strength Rubber/Rubber (*4)	> 2,2 N/mm ²	> 2,2 N/mm ²	>3,4 N/mm ²	>4 N/mm ²	>4 N/mm ²	> 3,4 N/mm ²	> 4 N/mm ²	> 4 N/mm ²	> 5 N/mm ²	
Typical lap shear strength Rubber/Metal (*4)	> 2,2 N/mm ²	> 2,2 N/mm ²	>3,4 N/mm ²	>4 N/mm ²	>5 N/mm ²	> 3,4 N/mm ²	> 4 N/mm ²	> 4 N/mm ²	> 5 N/mm ²	
Pot life at 23°C/73°F (*1) (=maxi. interruption time without having to change the static mixer)	1,5 min.	1.5 min.	5 min.			20 min.		40 min.		
	(+5°C: 3 min. +60°C: 15 sec)	(+5°C: 2 min. +60°C: 5 sec)	(+5°C: 7 min. +60°C: 1 min.)			(+5°C: 28 min. +60°C: 6 min.)		(+5°C: 60 min. +60°C: 18 min.)		
Max. time to spread at 23°C/73°F (in several passes for applying and distribution)	5-10 min.	2 min.	10-15 min.			60-90 min.		90-120 min.		
Waiting time at 23°C/73°F to achieve a medium tacky (*1)	5-15 min.	2-3 min.	10-30 min.			1-2 h		2-4 h		
Open time at 23°C/73°F (=Max. time between the start applying and closing the bonding surface)	15 min. (Thixotropisch: 10 min.)	3 min.	30 min.			2 h		4 h		
	30 min.	15 min.	30 min.			4 h		8 h		
Waiting time for sure handling strength at 23°C/73°F (*1)	(+5°C: 60 min. +60°C < 15 min.)	(+5°C: 30 min. +60°C < 7 min.)	(+5°C: 1 h +60°C < 10 min.)			(+5°C: 8 h +60°C: < 40 min.)		(+5°C: 24 h +60°C: < 60 min.)		
	30 Min.	15 Min.								
Hardening time up to full functional strength as crack repair at 23°C/73°F (*2)	(+5°C: 60 min.)	(+5°C: 30 min.)								
	30 Min.	15 Min.								
Curing time up to full functional strength as a splice at 23°C / 73°F (*2)	2 h	1 h	2 h			8 h		24 h		
	(+5°C: 4 h)	(+5°C: 2 h)	(+5°C: 4 h)			(+5°C: 18 h)		(+5°C: 54 h)		
Curing time to full functional strength by heating at 80°C / 176°F (*2)	< 20-30 min.	< 15 min.	< 20-30 min.			< 1 h		< 1.6 h		
	< 20-30 min.	< 15 min.	< 20-30 min.			< 1 h		< 1.6 h		

(*1) The processing times and waiting times for initial adhesion (tack) depend strongly on the ambient and material temperature and the task. The waiting time for tacky must be determined in practice for the first time by testing and then with the finger-back method. The curing time is also dependent on the layer thickness. With increasing layer thickness, the curing time is reduced (light exothermic reaction). After the functional strength is achieved the curing process lasts at least 48 hours until the final shore hardness and maximum chemical resistance is achieved. Further information can be found in the respective operation instructions and on the website www.hejatex.com

(*2) The indicated curing times depend on temperature, material to be bonded and the thickness. The values apply to SBR rubber with thin material thickness (10 mm / 25/64 inches).

(*4) The typical shear strength values are achieved only with appropriate rubber quality with substrate break of the rubber layer.

The technical data are based on actual determined values with individual selected materials and under specific conditions according to our quality management ISO9001-2015. To this extent, the data serve only as guidelines and must be confirmed in practice with the materials, conditions and the chosen method of use. Therefore, testing the glue properties for the intended application, the storage, and the right method of use and the disposal of the product is the responsibility of the end user. Beltec Solutions expressly excludes any liability, including the suitability for the specific purpose, the tradability and patent claims by third parties resulting from the purchase, storage, sale and use of the product Beltec Solutions disclaims all liability for consequential damages, including loss of profit. Further information can be found in our general conditions of sale.

Processing of Multiface®

The two components of Multiface® are mixed directly in the mixing nozzle of the cartridge during the application. The risk of a bad mixture and the risk of contamination due to the manipulation and mixing of a hardener or activator in a separate container are eliminated. The absence of harmful solvents also eliminates some risks for the operators and eventual long-term reactions with the bonded material.

Working conditions	<p>The surface to be bonded must be dry, dust-free, oil- and grease-free, without oxidation layer, and free from release agents. The surface tension should be > 38 mN/m. Application temperature: -30°C to +80°C / 176°F. At temperatures below +5°C / 43°F, especially in frosty conditions, it is imperative that Multiface® is warmed up to a processing temperature of approx. 20-30°C / 68-86°F (max. 60°C / 140°F) before application in order to achieve optimum viscosity for mixing. This also applies to the bonding surface (max. +80°C / 176°F) before processing. Processing Multiface® in direct sunlight in summer (up to +80°C / 176°F on the contact surface) is also possible. However, the possible processing time is considerably reduced in this case!</p>
Preparation of the contact surfaces	<p>The quality of adhesion depends largely on the contact surface preparation. Surfaces of soft and elastic material (e.g. rubber, PVC and PU) should be thoroughly grinded with an angle grinder and then roughened. Preferably use appropriate carbide abrasion discs with grit size 16 or 24 and do not exceed a speed of 800-3,000 rpm in order to avoid overheating of the contact surface (smear/daubing effect). Finally use a manual roughening brush or an electric or pneumatic roughening machine to achieve a surface roughness of up to 120 µm RZ. Hard material surfaces (e.g. metal, ceramic) are preferably sandblasted to achieve the best possible roughness. Alternative methods such as laser cleaning and grinding result in a significantly lower adhesion strength than sandblasting. The adhesion to metal should usually be enhanced by flaming, which helps to remove the last possible residues of oil and contamination. Finally, the abrasion dust must be removed, preferably with dry compressed air (oil-free!) or by using an unsoiled natural air brush.</p> <p>Caution: the surface of conveyor belts or abrasion protection plates are usually coated with some release agents during production to allow separation from the manufacturing equipment. These release agents can easily penetrate into the surface of the conveyor belt or the wear protection plate, which also prevent adhesion with Multiface®. This layer must therefore be mechanically removed to ensure the best possible bonding.</p>
Cleaning of the bonding surface	<p>The use of traditional solvents, chemical cleaners or etching agents should be avoided for health and safety reasons, but also because of possible unexpected reaction with Multiface®. In exceptional cases, check before any use, that no reaction take place, which weakens or prevents the adhesion.</p>
Neutralization	<p>Due to the composition of Multiface®, chemical neutralization of metal or rubber or plastic surfaces after grinding or roughening is usually not necessary.</p>
Primer	<p>The use of traditional primers or adhesion promoters should be avoided for health and safety reasons. Otherwise, check before any use that no reactions take place, which weakens or prevents the adhesion. If necessary, use the epoxy glue Multi-EP from Hejatex as a primer.</p>
Heating of the cartridges	<p>Depending on requirements, the cartridges can be heated up to max. 60°C to make them more viscous, and also to slightly reduce the curing time. For heating the cartridges never immerse them directly in the water (risk of loaming in case of leakage) but keep them dry!</p>
Prepare the cartridge and the caulking gun	<p>Remove the cartridge cap and check that both outputs are free. If necessary, remove the obstruction of hardened material and expel in this case a small amount to be sure that both can flow freely out and both sides are evenly filled. Then place the static mixer on the cartridge, insert the cartridge in the caulking gun and press the piston to push both components of the glue into the static mixer.</p>

<p>Mixing of the 2 components</p>	<p>Both components of Multiface® are mixed optimally with the supplied static mixer, where they immediately begin to react chemically with each other. The mixture must be very precise and stoichiometric. The first drops (about 1-2 g / 1-2 ml) should therefore not be used but expelled because they may not be perfectly mixed, and therefore should not cure completely. After this preliminary rinsing, Multiface® must be applied as quickly as possible and in one pass without interruption and all contact surface must be quickly assembled together during the open time before Multiface® hardens too much.</p>
<p>Applying and waiting time</p>	<p>Evenly apply or spray Multiface® with the respective caulking gun or spraying gun on the contact surface. It is essential to record the time of beginning in order to assemble the parts at the optimum contact time and to avoid exceeding the processing time. Spread quickly the material with a spatula to form a very thin layer. Then rub it with a short bristle brush into the pores to get best possible adhesion and to completely cover the entire surface to be bonded.</p> <p>When used as splicing material to join two parts together, further layers are not required. One layer on each side is enough.</p> <p>When used as filling material to repair cracks and surface damages, the damaged area should be filled immediately after the preliminary treatment and preferably in one pass.</p> <p>When used as wear and corrosion protection coating on vertical surfaces, layers of max. 0.3 mm per pass can be sprayed over each other. Depending on the version, a waiting time for over-coating should be waited, which generally corresponds to the pot life, in order to prevent the sprayed coating from flowing down. Basically, Multiface® can be applied wet on wet without waiting time or wet on half dry or wet on dry. It can also be gradually applied over the pot time on larger surfaces by alternately applying and spreading with a spatula and rubbing it with a brush. Each break should not exceed half of the pot life to avoid changing the static mixer.</p>
<p>Consumption</p>	<p>The quantity required for each side is approximately 100-300 g/m² (0.43-1.31 oz./ft²), depending on the material, the roughness of the surface to be bonded and the pressure force of the fixing system. Consumption may be significantly more for absorbent or uncoated fabrics or for filling cracks or surface damages and for spray coating.</p>
<p>Assembly of contact surfaces</p>	<p>The assembly of contact surfaces can be done immediately after applying the material or after a waiting time, depending on whether a slight or higher initial adhesion is required (check with the finger-back method). If the surface begins to feel dry, it can also be activated by heating with a heat gun to achieve maximum initial adhesion. Both procedures ensure optimal adhesion after final curing. In case of waiting, complete drying should be avoided. Re-apply some Multiface® if necessary. The waiting time depends on the ambient temperature. Both adhesive surfaces should be folded together without air inclusion by rolling up with a manual roller and kept evenly in contact each other by some pressure (ideally 2 Kg/cm² / 28 psi) during the setting time. This is preferably achieved by a fixing device or with a press, optionally providing an acceleration of the curing by heating the surface. After matting the surfaces within the open time, the bonding position can be easily moved and corrected. If necessary, the connection can even be re-opened and closed again to achieve the perfect position. Close the fixing device and wait the full handling strength. After this waiting period, carefully open the fixing device and, if necessary, seal the remaining joint with Multiface 1.5. A flowing out of Multiface® out of the joining gap is a good indicator of sufficient material on the bonding surfaces. Finally, wait the functional strength before starting.</p>
<p>Final cleaning</p>	<p>Fresh and uncured material can be removed with a solvent. Already hardened material must be removed mechanically.</p>