

PLEXIGLAS®

ACRIFIX®
Adhesives and Auxiliaries



POLYVANTIS



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For a perfect union

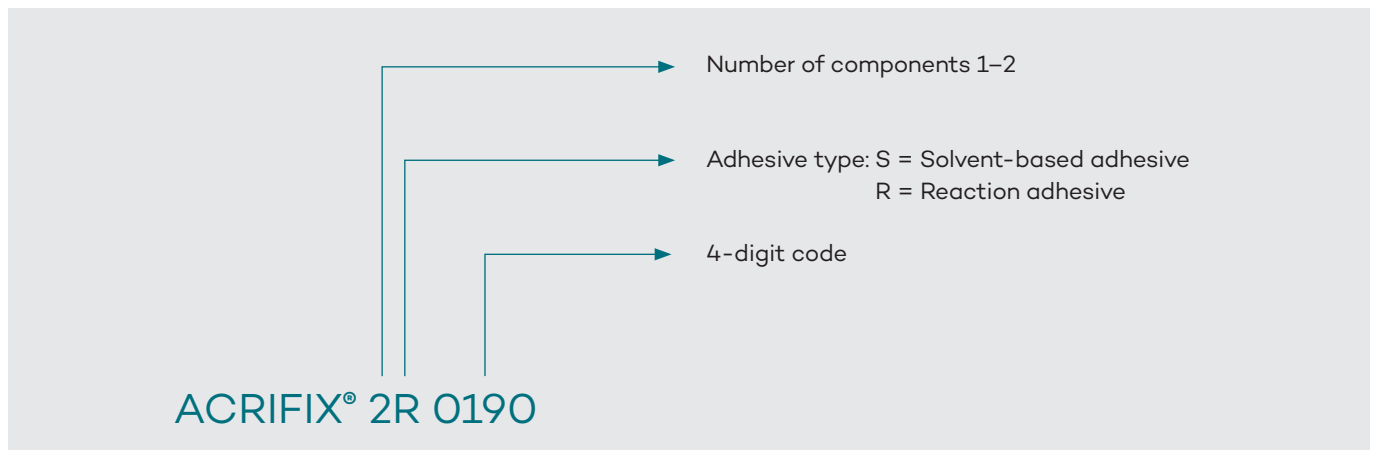
PLEXIGLAS®, the world's first acrylic, manufactured by our company, can be joined by a variety of methods. A distinction is made between permanent and non-permanent mechanical joints. The joining method best suited to the application depends on the given requirements.

The most common method for permanent joints is bonding.

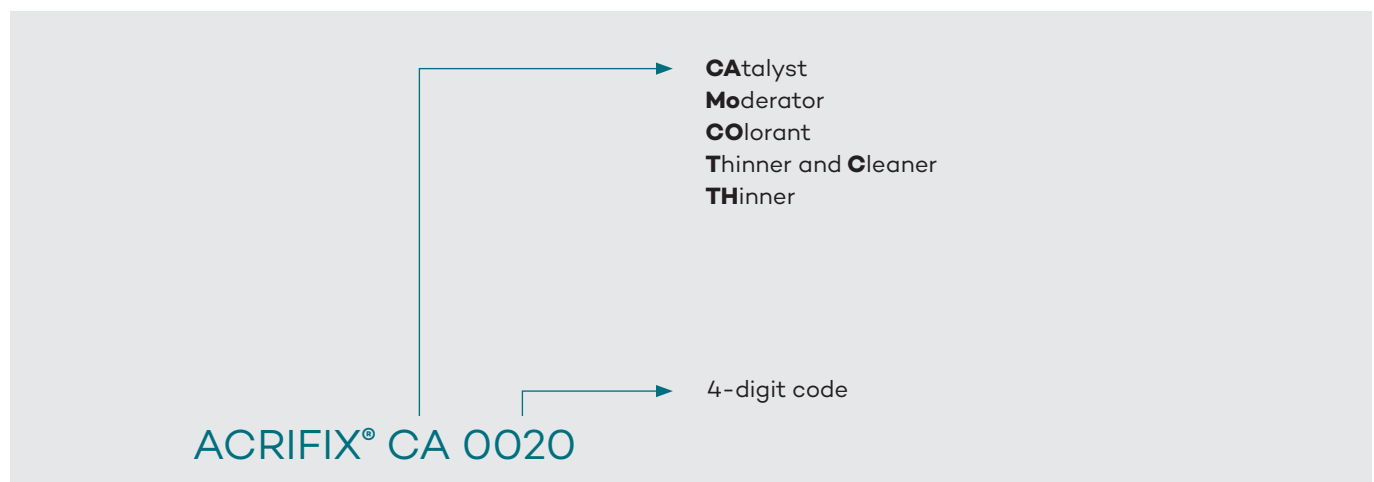
Our range of ACRIFIX® adhesives and auxiliaries offers the ideal solution for every application, always providing a perfect union between PLEXIGLAS® and other grades of acrylic.

We divide adhesives into two main groups, reaction adhesives and solvent-based adhesives.

Nomenclature of ACRIFIX® Adhesives



Nomenclature of ACRIFIX® Auxiliaries





ACRIFIX[®]

Solvent-Based Adhesives

Solvent-based adhesives mainly consists of blends of different solvents. Their mode of action is based on partial dissolution of the adherend surface, during which the polymer chains swell and become interlocked. After the parts are joined, the solvents evaporate from the adhesive and diffuse into the material. The interlocked polymer chains contract to form the union. Solvent-based adhesives generally provide good bond strength.

Their advantage lies in the rapid initial bond strength between the bonded parts and their suitability for outdoor applications.

Solvent-Based Adhesives					
Adhesive	ACRIFIX® 1S 0126	ACRIFIX® 1S 0116	ACRIFIX® 1S 0127	ACRIFIX® 1S 0117	ACRIFIX® 1S 0109
Type of adhesive	1-component solution adhesive, physically curing, low viscosity	1-component solution adhesive, physically curing, low viscosity	1-component solution adhesive, physically curing, highly fluid	1-component solution adhesive, physically curing, highly fluid	1-component solution adhesive, physically curing, highly viscous
For sheet material	XT, (GS)	XT	XT, (GS)	XT	XT, (GS)
Application	quick and easy bonding, butt joints, excellent fit, no area bonding	quick and easy bonding, butt joints, excellent fit, no area bonding	quick and easy bonding, butt joints, very accurate fit required, no area bonding	quick and easy bonding, butt joints, very accurate fit required, no area bonding	edge bonding
Typical applications	displays, store fixtures, mechanical engineering	displays, store fixtures, mechanical engineering	displays, store fixtures, mechanical engineering	displays, store fixtures, mechanical engineering	illuminated signs
Gap-filling	slightly	slightly	no	no	moderately
Appearance of bond	bubbles may form	slight bubble formation possible	bubbles may form	slight bubble formation possible	bubble formation
Weather-resistant	yes	yes	yes	yes	yes
Bond strength	good	very good	good	very good	good
Comments	also for material with slight inherent stress	can be used without applying pressure to bonded parts	also for material with slight inherent stress	optimized for capillary effect, can be used without applying pressure to bonded parts	no capillary effect, immediate skin formation
Initial bond in s	10 – 30	30 – 90	10 – 30	30 – 90	5 – 10
Time required before further processing in h	> 3	> 3	> 3	> 3	> 3
Viscosity mPA*s (20 °C)	850 – 1100	650 – 900	15	0,8	3000 – 3400
Contains dichloromethane (suspected carcinogen)	yes	no	yes	no	yes
Standard packaging units (other units possible)	5 x 1.2kg aluminum bottle	5 x 1kg aluminum bottle 20 x 100g tube	5 x 1.2kg aluminum bottle	5 x 1kg aluminum bottle	5 x 1.2kg aluminum bottle

XT = extruded acrylic sheet

GS = cast acrylic sheet

For divergent packaging units see current sales range

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Reaction Adhesives

Reaction adhesives based on MMA/PMMA are polymerization adhesives consisting of one or more components. They cure by chemical reaction (polymerization) upon exposure to light or UV radiation, or upon addition of catalysts. They act by partial dissolution of the adherend surface by the monomer. This causes the polymer chains to swell and become interlocked.

During curing, the monomer forms new polymer chains that promote bond strength by additional entanglement. These adhesives are gap-filling and highly suitable for area bonding. They provide very strong bonds of attractive appearance that are generally weather-resistant, depending on the desired adhesive type.

Reaction adhesives (chemically curing, upon light exposure)				
Adhesive	ACRIFIX [®] 1R 0192	ACRIFIX [®] 1R 9019	ACRIFIX [®] 1R 0350	ACRIFIX [®] 1R 9016
Type of adhesive	1-component polymerization adhesive, lightcuring, viscous	1-component polymerization adhesive, UV curing, highly fluid	rapid 1-component polymerization adhesive, UV-curing, highly viscous	1-component polymerization adhesive, UV curing, low viscosity
For sheet material	GS and XT Clear	XT Clear	GS and XT Clear	GS and XT Clear
Application	butt joints, area bonding, fillet joints	Area bonding for complex, colorless geometries, capillary effect	area bonding, fillet joints	fillet joints, area bonding, butt joints
Typical applications	furniture, store fixtures, displays, mechanical engineering, model building, repairs and DIY	Bonds of laser-cut elements, furniture, store fixtures, displays	caravan windows, displays, store fixtures, tradeshow booths, mechanical engineering	Display cases, furniture, store fixtures, displays, mechanical engineering, model building
Gap-filling	yes	slightly	yes	yes
Appearance of bond	virtually colorless, bubble-free	virtually colorless, bubble-free	virtually colorless, bubble-free, slightly cloudy	virtually colorless, bubble-free, more or less smooth surface
Weather-resistant	yes (annealing recommended)	yes (annealing recommended)	yes (annealing recommended)	yes (annealing recommended)
Bond strength	very good	good	good	very good
Comments	Can be thinned with ACRIFIX [®] 1R 9019	Can be thickened with ACRIFIX [®] 1R 0192	mechanically applicable adhesive that is rubbery-elastic after curing	Can be thinned with ACRIFIX [®] 1R 9019
Curing	Light- or UV-A/B-curing	UV-A/B-curing	UV-A/B-curing	UV-A/B-curing
Pot life in min. (200g, 20 °C)	5–30, heavily dependent on type and power of light source	5–30, heavily dependent on type and power of light source	5–30, heavily dependent on type and power of light source	5–30, heavily dependent on type and power of light source
Curing time in min.	10 – 30	30 – 60	3 – 5 in thin layer	10 - 20
Time required before further processing in h	> 2	> 2	> 1	> 2
Viscosity mPA*s (20 °C)	1600 – 2000	ca. 0,6	4500 – 6000	500 - 800
Standard packaging units (other units possible)	5 x 1kg aluminum bottle 20 x 100g tube	5 x 1kg aluminum bottle	1 x 25 kg composite can	5 x 1 kg aluminum bottle

XT = extruded acrylic sheet
GS = cast acrylic sheet

For divergent packaging units see current sales range



Reaction adhesives (chemically curing, upon catalyst)				
Adhesive	ACRIFIX® 2R 0190	ACRIFIX® 2R 1200	ACRIFIX® 2R 2019	ACRIFIX® 2R 0195
Type of adhesive	2-component polymerization adhesive, chemically curing, viscous	2-component polymerization adhesive, chemically curing, viscous	2-component polymerization adhesive, chemically curing, low viscosity	2-component polymerization adhesive, chemically curing, viscous (thixotropic)
For sheet material	GS and XT	GS and XT	GS and XT	for satin GS and XT surfaces
Application	butt joints, area bonding, fillet joints	butt joints, area bonding, fillet joints	butt joints, area bonding, fillet joints	butt joints, area bonding, fillet joints
Typical applications	furniture, storefixtures, displays, mechanical engineering, model building, aquarium glazing	furniture, store fixtures, displays, mechanical engineering, model building	Display cases, furniture, store fixtures, displays, mechanical engineering, model building	furniture, store fixtures, displays, mechanical engineering, model building
Gap-filling	yes	yes	yes	yes
Appearance of bond	virtually colorless, bubble-free	virtually colorless, bubble-free, more or less smooth surface	virtually colorless, bubble-free, more or less smooth surface	bubble-free, translucent white, matte surface
Weather-resistant	yes (annealing recommended)	yes (annealing recommended)	yes (annealing recommended)	yes (annealing recommended)
Bond strength	very good	very good	very good	very good
Comments	can be thinned and colored	can be thinned and colored, becomes cloudy when exposed to moisture	can be thinned and colored, joint becomes slightly cloudy when exposed to moisture	can be thinned and colored
Curing	3 – 6 % catalyst ACRIFIX® CA 0020	3 – 6 % catalyst ACRIFIX® CA 0020	3 – 6 % catalyst ACRIFIX® CA 0020	3 % catalyst ACRIFIX® CA 0020
Pot life in min. at 3% ACRIFIX® CA 0020/200g, 20 °C	20 – 25	15 – 20	20 – 25	20 – 25
Curing time in min. at 3% ACRIFIX® CA 0020	60 – 70	40 – 50	60 – 70	60 – 70
Time required before further processing in h	> 3	> 3	> 3	> 3
Viscosity mPA's (20 °C)	1600 – 2000	2800 – 3600	500 – 800	not measurable, thixotropic
Standard packaging units (other units possible)	5 x 1 kg aluminum bottle 1 x 25 kg composite can 1 x 50 kg hobbock	1 x 25 kg composite can	5 x 1 kg aluminum bottle 1 x 25 kg composite can	5 x 1 kg plastic bottle

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Auxiliaries and Colorants

Auxiliaries and colorants are required to prepare adherends in the appropriate way or optimize adhesives for their application, e.g. by adjusting the viscosity to the given requirements.

Colorants make it possible to vary the color of the adhesive and adapt it to the color of the sheet material.

Auxiliaries and Colorants					
Auxiliary	ACRIFIX® CA 0020	ACRIFIX® MO 0070	ACRIFIX® TC 0030	ACRIFIX® TH 0032	ACRIFIX® CO
Description	clear, slightly yellowish liquid based on dibenzoyl peroxide	clear purplish liquid	clear, colorless liquid based on methyl methacrylate	clear, slightly yellowish liquid based on methyl methacrylate with activator	colored pasty compound based on organic and inorganic pigments in plasticizer
Function	hardener for polymerization adhesives	reaction moderator for polymerization adhesives	for thinning polymerization adhesives and cleaning adherends	for thinning 2R polymerization adhesives	for coloring polymerization adhesives
For use with adhesive	all 2R polymerization adhesives	ACRIFIX® 2R 0190	all polymerization adhesives	all 2R polymerization adhesives	all 2R polymerization adhesives
Comments	Storage temperature: at least 5 °C and no more than 30 °C Recommended storage temperature (+10 °C – +25 °C)	discoloration does not affect functionality	for thinning ≤ 10 %	for thinning > 10 %	Black CO 9073 White CO W074 Red CO 3075 Blue CO 5076 Yellow CO 1077
Viscosity mPA*s (20 °C)	approx. 50	30	0.6	0.6	pasty
Standard packaging units (other units possible)	5 x 60 g aluminum bottle 5 x 1 kg aluminum bottle 1 x 30 kg composite can	5 x 60 g aluminum bottle	5 x 1 kg aluminum bottle 1 x 25 kg composite can	5 x 1 kg aluminum bottle	500 g PE can

For divergent packaging units see current sales range



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Safety measures and health protection

All ACRIFIX® adhesives and auxiliaries have been classified in accordance with Regulation (EC) 1272/2008. The containers are labeled in accordance with the GHS (Globally Harmonized System of Classification and Labeling of Chemicals).

ACRIFIX® adhesives and auxiliaries are intended for commercial use only.

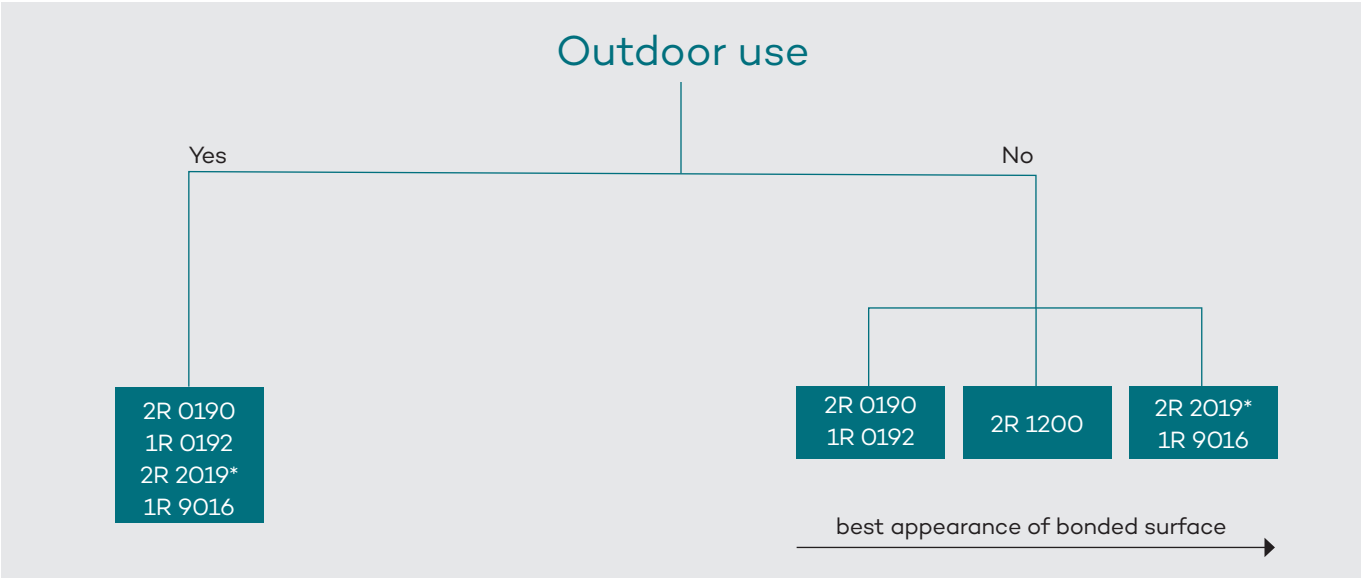
Information on safety measures, health protection and disposal can be found on the relevant safety data sheets.



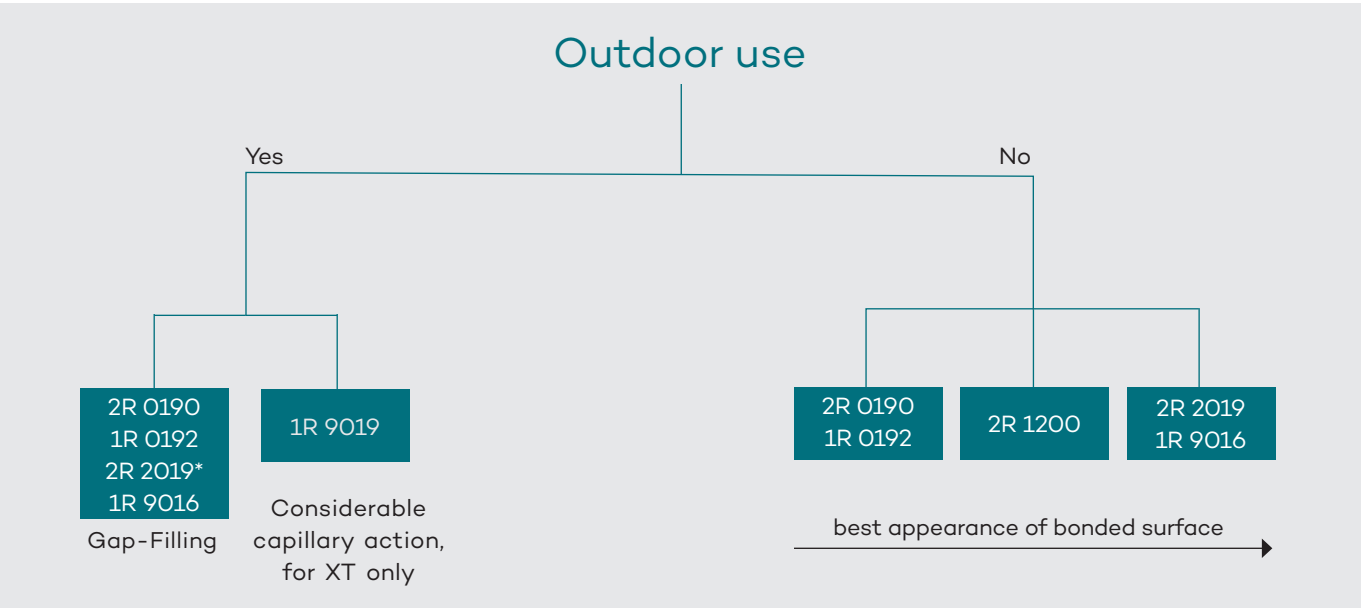
Decision Tree



V-Groove (Fillet Joint)



Area Bonding

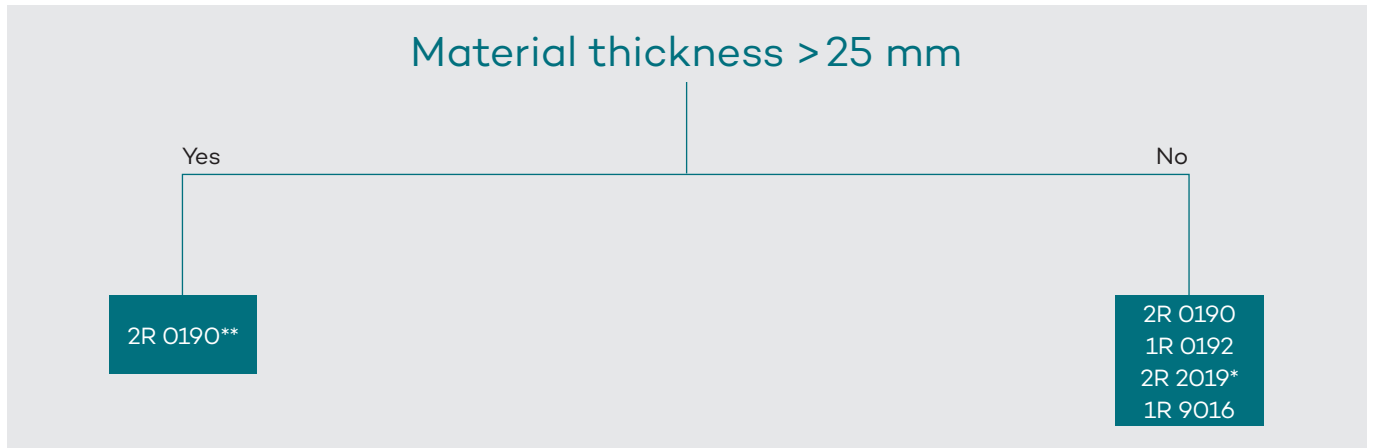


Satin Bonded Surfaces

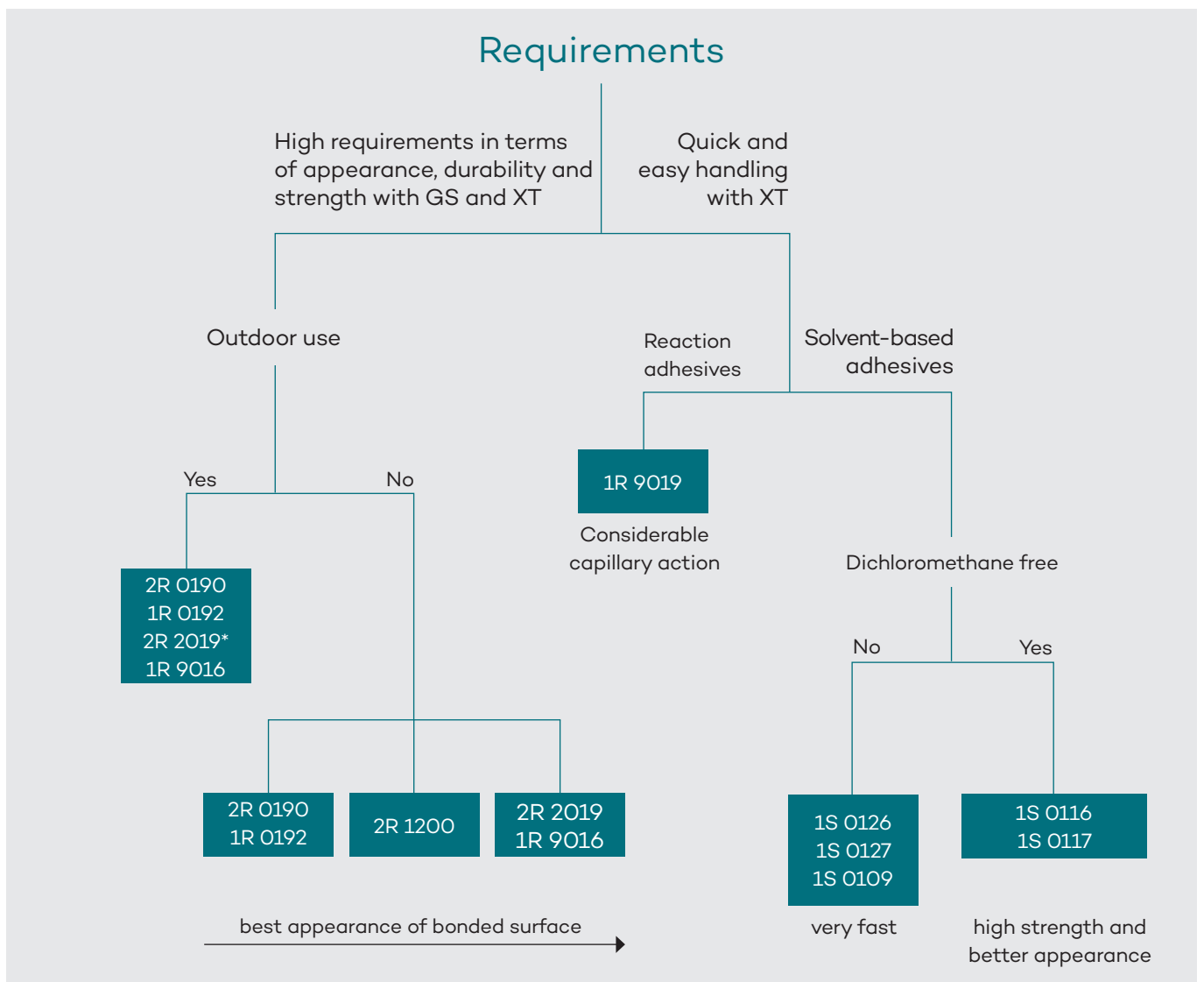


* Joint could become slightly cloudy when exposed to moisture

Butt Joints



T-Joints and Butt Joints



* Joint could become slightly cloudy when exposed to moisture

** If necessary, addition ACRIFIX® MO 0070 (see technical information ACRIFIX® MO 0070, ref. number: 391-23)

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® = registered trademark

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Certified to DIN EN ISO 9001 (Quality) and DIN EN ISO 14001 (Environment)

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