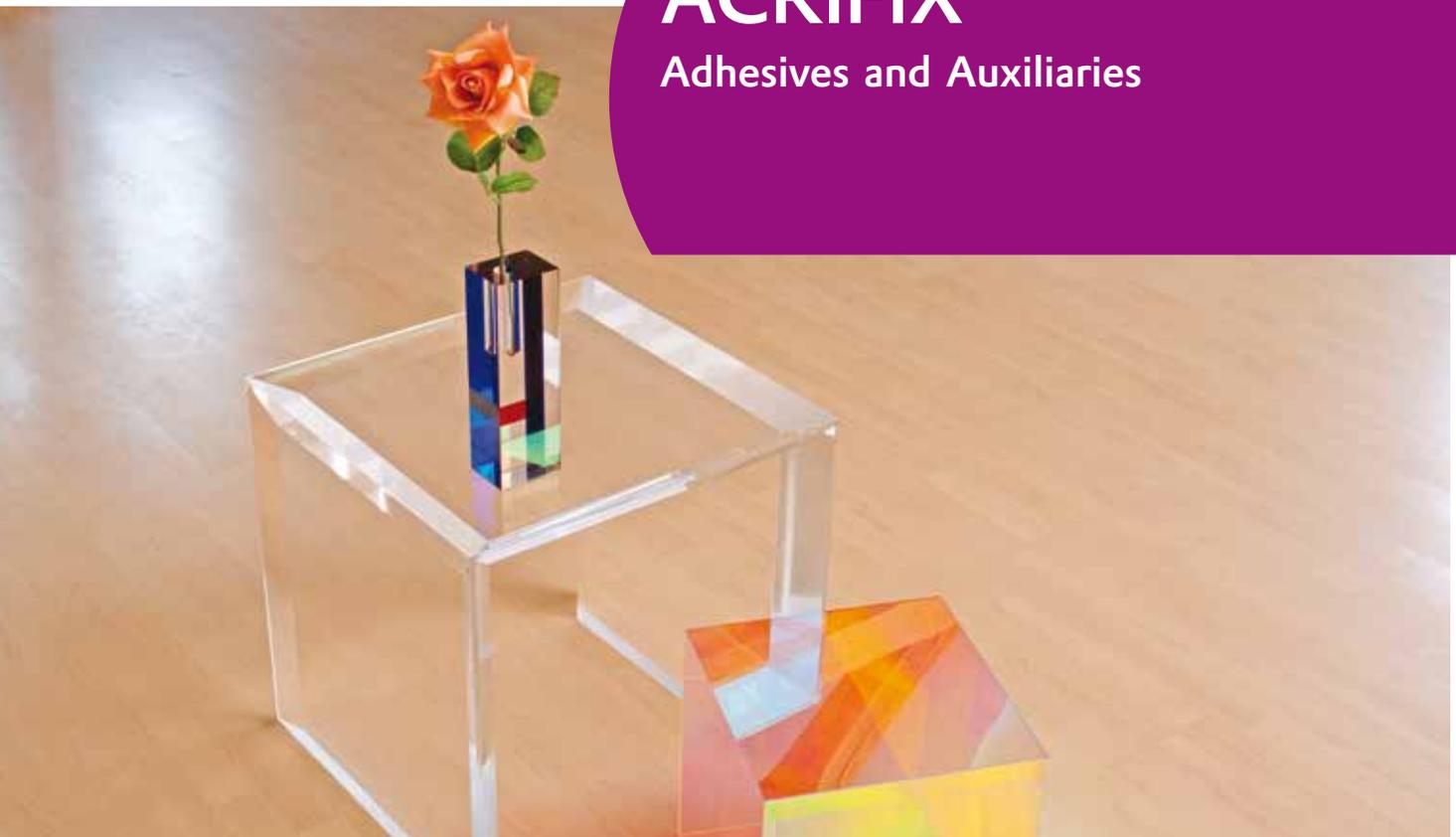


ACRIFIX[®]

Adhesives and Auxiliaries



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.

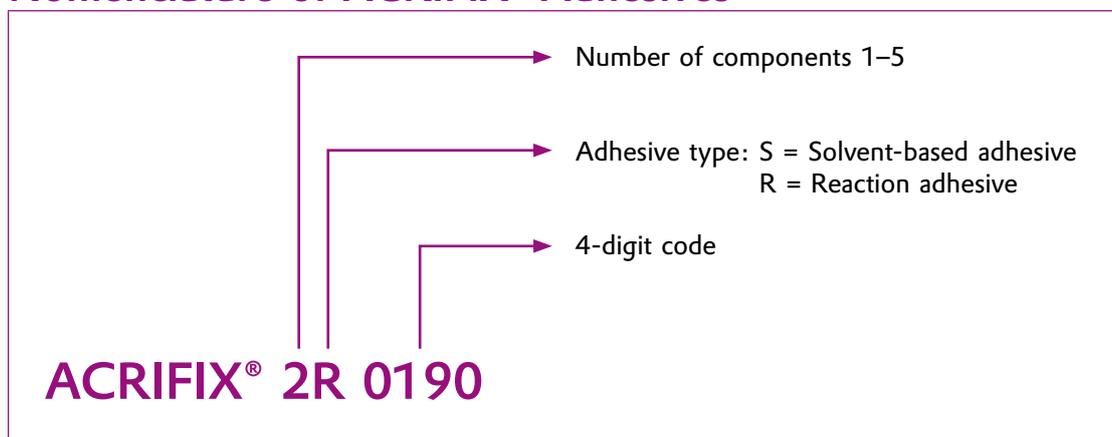
We divide adhesives into two main groups, reaction adhesives and solvent-based adhesives.



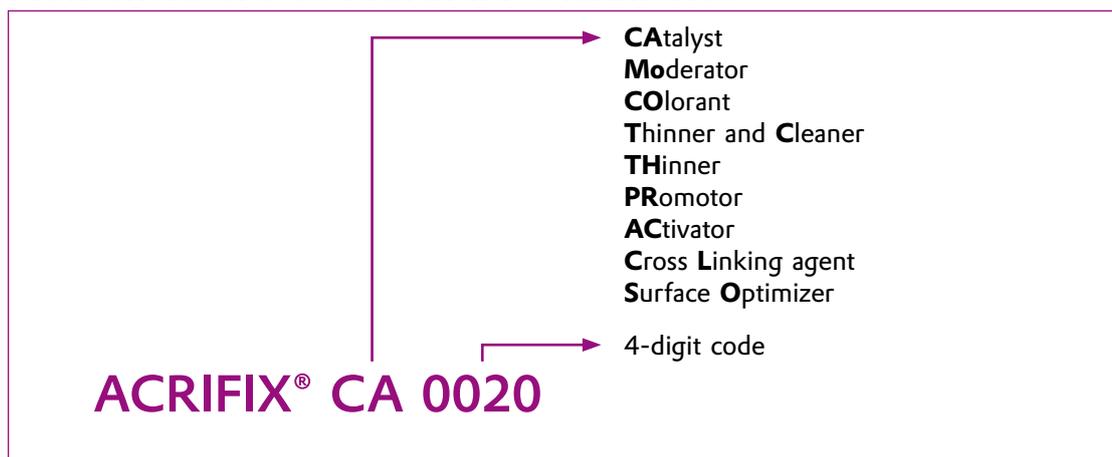
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Nomenclature of ACRIFIX® Adhesives



Nomenclature of ACRIFIX® Auxiliaries



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, viscous	1-component solution adhesive, physically curing, viscous	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)	750–1000	650–900	15	0.8	3000–3400
Contains dichloro-methane (suspected carcinogen)	yes	no	yes	no	yes
UN number	1993	1133	1993	1133	1593
Standard packaging units (other units possible)	5 x 1.2 kg aluminum bottle	5 x 1 kg aluminum bottle 20 x 100g tube	5 x 1.2 kg aluminum bottle	5 x 1 kg aluminum bottle	5 x 1.2 kg aluminum bottle

XT = extruded acrylic sheet
 GS = cast acrylic sheet
 All solvent-based adhesives are intended solely for professional use
 Labeling in compliance with Regulation (EC) No. 1272/2008,
 see current applicable technical information

For divergent packaging units see current sales handbook
 ACRIFIX® 1S 0126 replaces ACRIFIX® 1S 0106
 ACRIFIX® 1S 0127 replaces ACRIFIX® 1S 0107

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 0310
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	rapid 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	area bonding, butt joints, laminating adhesive
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	caravan windows, displays, store fixtures, tradeshow booths, mechanical engineering
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, slightly cloudy
Weather-resistant	yes (annealing recommended)	yes (annealing recommended)	yes (annealing recommended)	yes (annealing recommended)
Bond strength	very good	good	good	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	mechanically applicable adhesive that is rubbery-elastic after curing
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	3–5 in thin layer
Time required before further processing in h	> 3	> 2	> 1	> 1
Viscosity mPA*s (20 °C)	1600–2000	Approx. 0.6	4500–6000	500–700
UN number	1133	1133	1133	1133
Standard packaging units (other units possible)	5 x 1 kg aluminum bottle 20 x 100g tube	5 x 1 kg aluminum bottle	1 x 25 kg composite can	Special grade, produced upon request

XT = extruded acrylic sheet
GS = cast acrylic sheet
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For divergent packaging units see current sales handbook



Reaction adhesives (chemically curing, upon catalyst)

Adhesive	ACRIFIX® 2R 0190	ACRIFIX® 2R 1200	ACRIFIX® 2R 2016	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
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, store fixtures, 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	15–20	20–25
Curing time in min. at 3% ACRIFIX® CA 0020	60–70	40–50	40–50	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
UN number	1133	1133	1133	1133
Standard packaging units (other units possible)	5 x 1 kg aluminum bottle 1 x 25 kg composite can 1 x 50 kg hobcock	5 x 1 kg aluminum bottle 1 x 25 kg composite can	5 x 1 kg aluminum bottle 1 x 25 kg composite can	5 x 1 kg plastic bottle

ACRIFIX® 2R 2016 replaces ACRIFIX® 2R 1900
 ACRIFIX® 2R 2016 with ACRIFIX® SO 0016 replaces ACRIFIX® 2R 1074

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® SO 0016	ACRIFIX® MO 0070	ACRIFIX® TC 0030	ACRIFIX® TH 0032	ACRIFIX® CO
Description	clear, slightly yellowish liquid based on dibenzoyl peroxide	Clear, colorless liquid, low-viscosity	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	Surface-smoothing additive	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 2016	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)	Addition of ACRIFIX® SO 0016 to 2R 2016 improves the surface smoothness	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	32,7 at 25 °C	30	0.6	0.6	pasty
UN number	3082	not applicable	not applicable	1247	1247	not applicable
Standard packaging units (other units possible)	5 x 60 g aluminum bottle 5 x 1 kg aluminum bottle 1 x 30 kg composite can	1 x 1 kg aluminum bottle 5 x 1 kg aluminum bottle	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

All Auxiliaries and colorants are intended solely for professional use
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For divergent packaging units see current sales handbook



Reaction adhesives and auxiliaries for aquariums

Special multicomponent adhesive and the auxiliaries needed for use in clear butt joints with relatively thick block material and joint geometries – suitable for creating the parts typically used in the aquarium building industry.

This reaction adhesive fills joints and is weather resistant. The cured seams are extremely strong and virtually colorless, and are characterized by their extremely low solvent content after annealing.

Reaction adhesives and corresponding auxiliaries (aquarium construction)

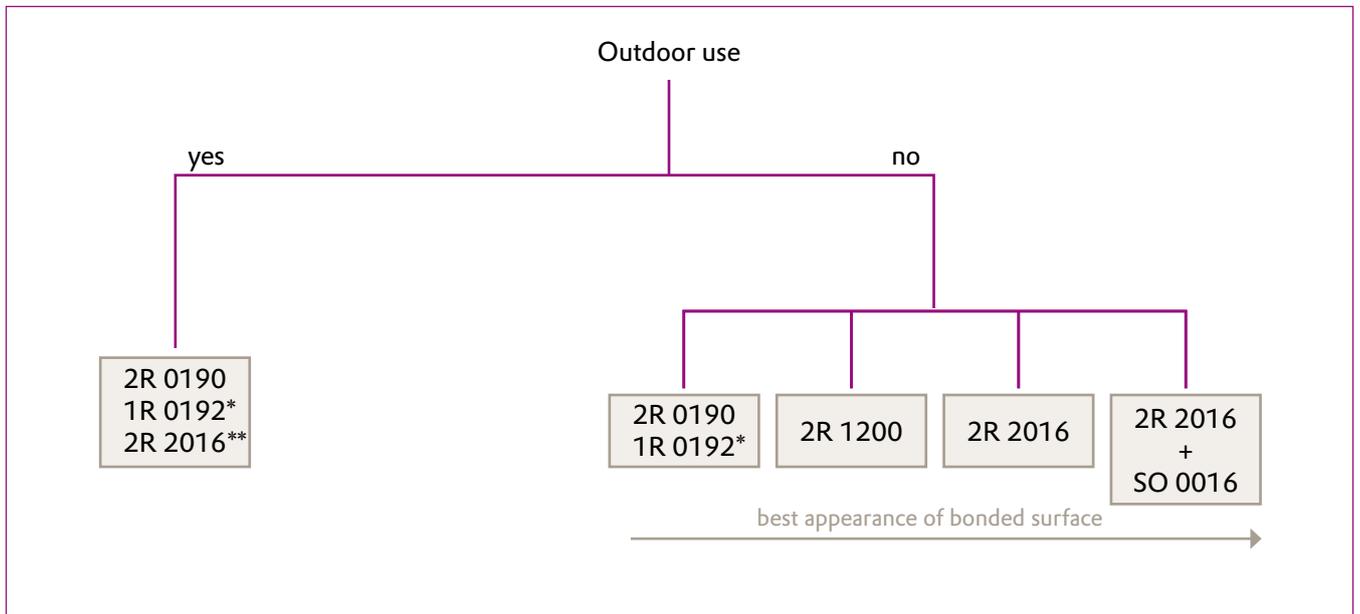
Reaction adhesive/ auxiliaries	ACRIFIX® 5R 0194	ACRIFIX® CA 0030	ACRIFIX® PR 0031	ACRIFIX® AC 0032	ACRIFIX® CL 0033
Adhesive type/ Description of auxiliaries	5-component polymerization adhesive, chemically curing, viscous	clear, colorless liquid based on ketone peroxide	clear colorless liquid based on a mercaptane	clear, slightly greenish liquid based on a vanadium salt	slightly yellowish liquid/ paste derived from multifunctional acrylates
Application of adhesive/ Function of auxiliaries	for joints up to 6mm thickness, butt joints, area bonding, fillet joints	hardener for 5R polymerization adhesive	additional accelerator for 5R polymerization adhesive	activator for 5R polymerization adhesive	crosslinking agent for 5R polymerization adhesive
Comments	can be thinned with max. 20 % ACRIFIX® TC 0030	avoid direct contact with activator ACRIFIX® AC 0032		avoid direct contact with catalyst ACRIFIX® CA 0030 and ACRIFIX® CA 0020	avoid direct contact with catalyst ACRIFIX® CA 0030 and ACRIFIX® CA 0020
Curing	Proportionately with ACRIFIX® CA 0030, PR 0031, AC 0032, and CL 0033	Add 0.5% ACRIFIX® CA 0030 to ACRIFIX® 5R 0194	Add 0.3% ACRIFIX® PR 0031 to ACRIFIX® 5R 0194	Add 3.0% ACRIFIX® AC 0032 to ACRIFIX® 5R 0194	Add 0.5% ACRIFIX® CL 0033 to ACRIFIX® 5R 0194
Viscosity mPA*s (20 °C)	1600–2100	16	40	40	350 at 38 °C
UN number	1133	3105	1760	1760	3082
Standard packaging units (other units possible)	Special grade, produced upon request	Special grade, produced upon request	Special grade, produced upon request	Special grade, produced upon request	Special grade, produced upon request

All reaction adhesives and auxiliaries are intended solely for professional use
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see current applicable technical information

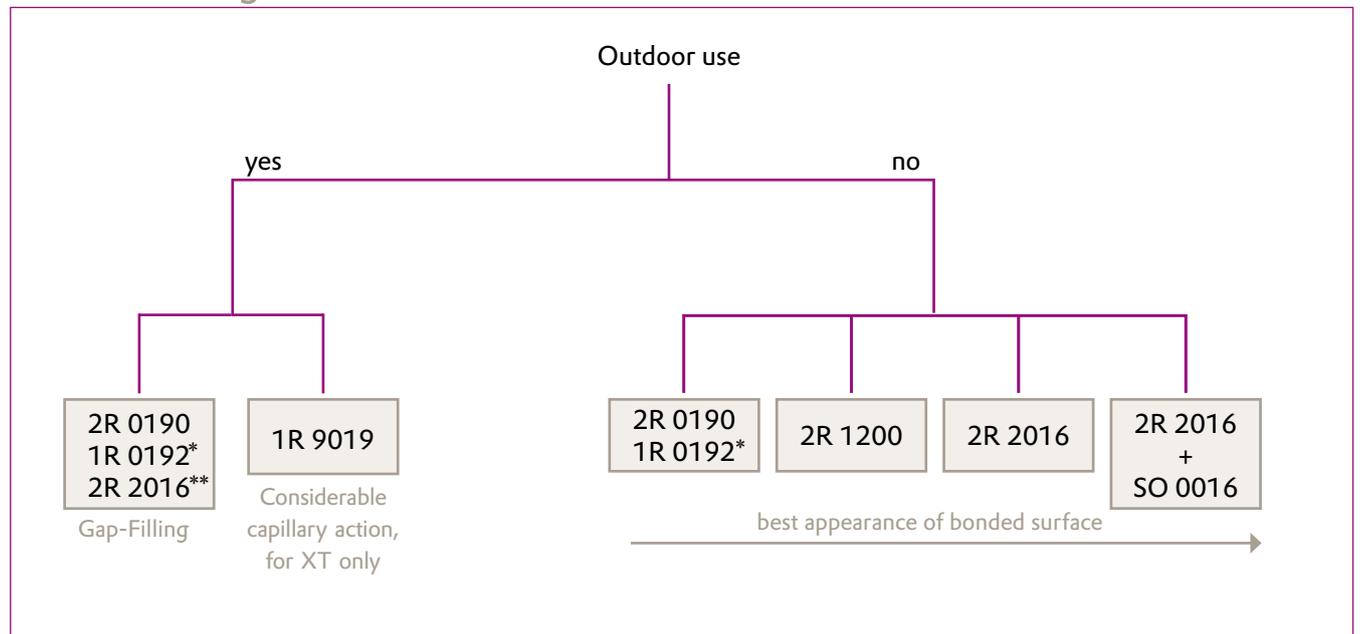


Decision Tree

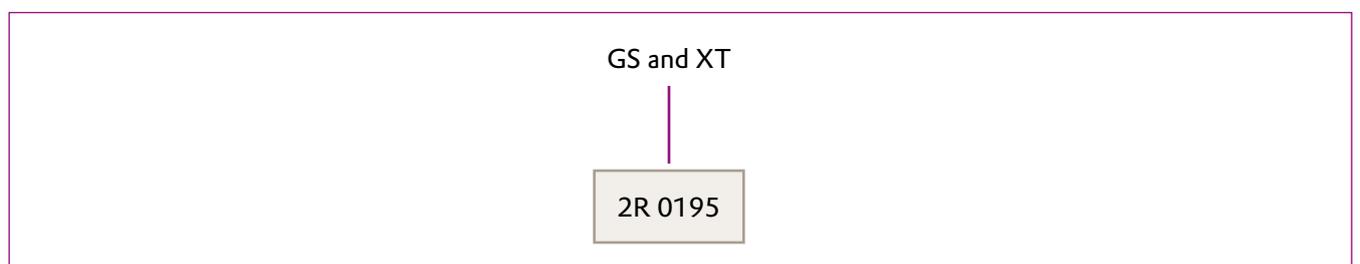
V-Groove (Fillet Joint)



Area Bonding



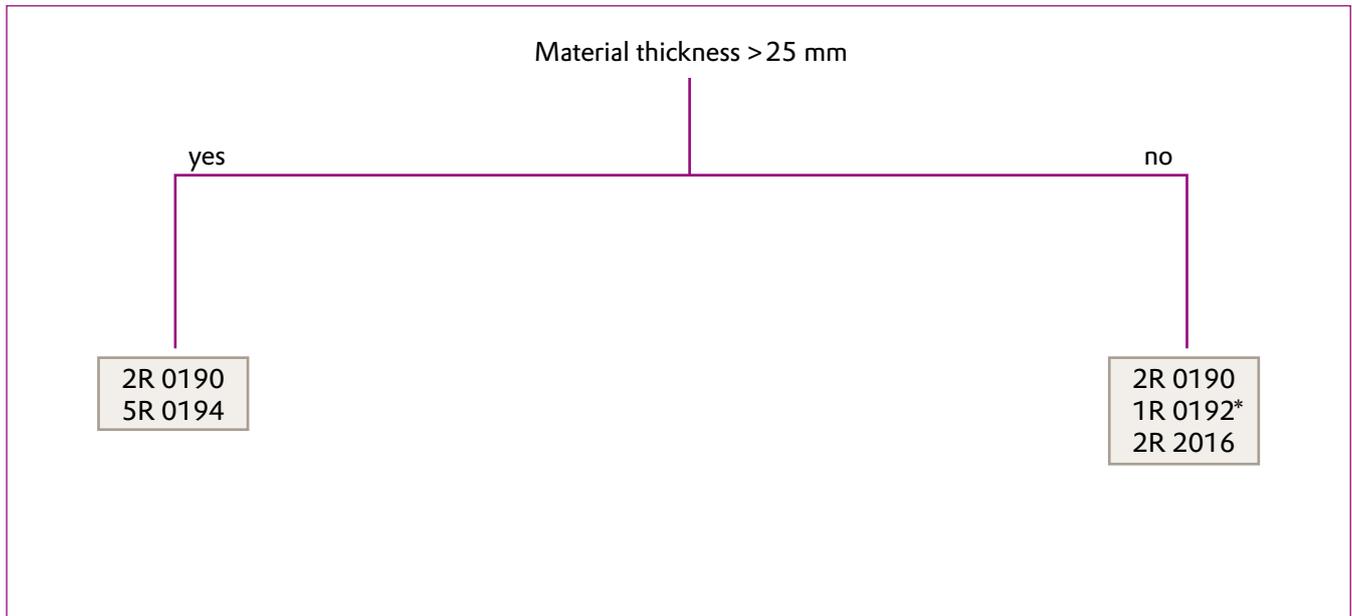
Satin Bonded Surfaces



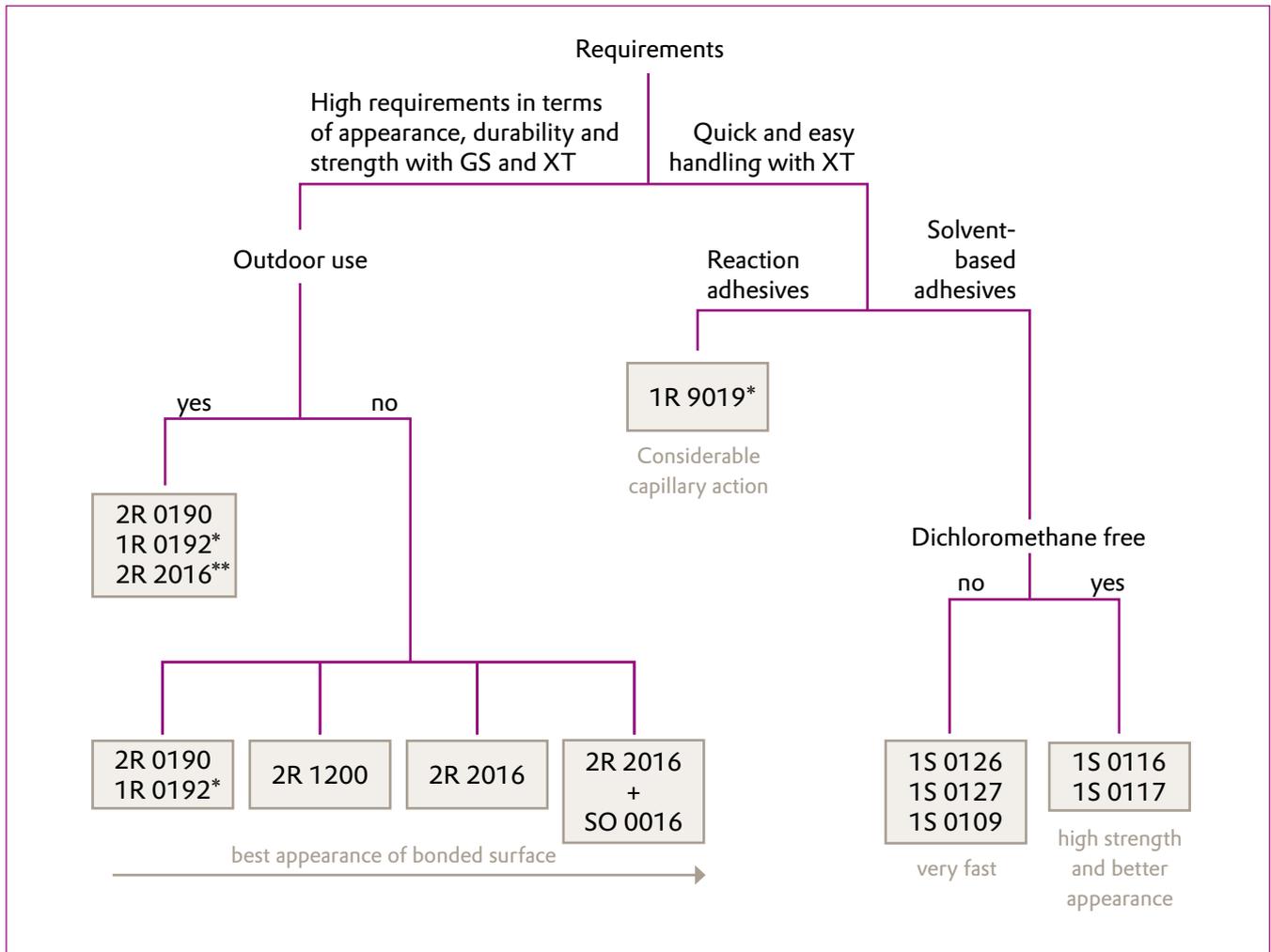
* UV-curing adhesive

** Joint could become slightly cloudy when exposed to moisture

Butt Joints



T-Joints and Butt Joints



* UV-curing adhesive

** Joint could become slightly cloudy when exposed to moisture

® = registered trademark

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are registered trademarks of
Evonik Röhm GmbH, Darmstadt, Germany.

Evonik Industries is a worldwide manufacturer of PMMA products sold under the PLEXIGLAS® trademark on the European, Asian, African and Australian continents and under the ACRYLITE® trademark in the Americas.

Certified to DIN EN ISO 9001 (quality)
and DIN EN ISO 14001 (environment)

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