

IX 28211

Two component epoxy paste adhesive

Key properties

- Multi purpose
- Long working life
- Low shrinkage
- Good resistance to dynamic loading
- Bonds a wide variety of materials in common use

Description

IX 28211 is a multipurpose, two component, room temperature curing, paste adhesive of high strength and toughness.

It is suitable for bonding a wide variety of metals, ceramics, glass, rubber, rigid plastics and most other materials in common use. It is a versatile adhesive for the craftsman as well as most industrial applications.

Product data

	28211A	28211B	28211 (Mixed)
Colour (visual)	natural	pale yellow	pale yellow
Specific gravity	1.15	0.95	1.05
Viscosity at 25°C (Pas)	30-50	20-35	30-45
Pot Life (100 gm at 25°C)	-	-	100 minutes

Processing

Pretreatment

The strength and durability of a bonded joint are dependant on proper treatment of the surfaces to be bonded. At the very least, joint surfaces should be cleaned with a good degreasing agent such as acetone or other proprietary degreasing agents in order to remove all traces of oil, grease and dirt. Low grade alcohol, gasoline (petrol) or paint thinners should never be used. The strongest and most durable joints are obtained by either mechanically abrading or chemically etching pickling the degreased surfaces. Abrading should be followed by a second degreasing treatment

Mix ratio	Parts by weight	Parts by volume
28211A	100	100
28211B	80	100

IX 28211 is available in cartridges incorporating mixers and can be applied as ready to use adhesive with the aid of the tool recommended by IXChemistry.

Application of adhesive

The resin/hardener mix may be applied manually or robotically to the pretreated and dry joint surfaces. A layer of adhesive 0.05 to 0.10 mm thick will normally impart the greatest lap shear strength to the joint. The joint components should be assembled and secured in a fixed position as soon as the adhesive has been applied. Too thick rubber can not bring greater bonding strength.

Equipment maintenance

All tools should be cleaned with hot water and soap before adhesives residues have had time to cure. The removal of cured residues is a difficult and time-consuming operation. If solvents such as acetone are used for cleaning, operatives should take the appropriate precautions and, in addition, avoid skin and eye contact. Used the packing box can't be used again.

Time to minimum shear strength

Temperature	°C	10	15	23	40	60	100
Cure time to reach LSS >1 MPa	hours	24	12	7	2	-	-
	minutes	-	-	-	-	30	6
Cure time to reach LSS >10 MPa	hours	36	18	10	3	-	-
	minutes	-	-	-	-	45	7

LSS =Lap shear strength

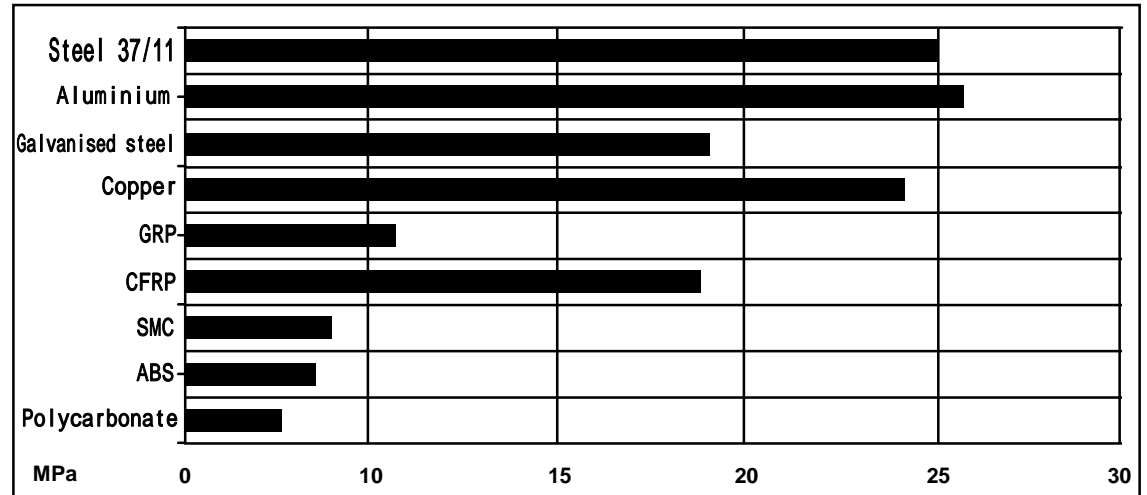
Typical cured properties

Sample standard

Unless otherwise stated, the figures given below were all determined by testing standard specimens made by lap-jointing 114 x 25 x 1.6mm strips of aluminium alloy. The joint area was 12.5 x 25 mm in each case. The figures were determined with typical production batches using standard testing methods. They are provided solely as technical information and do not constitute a product specification.

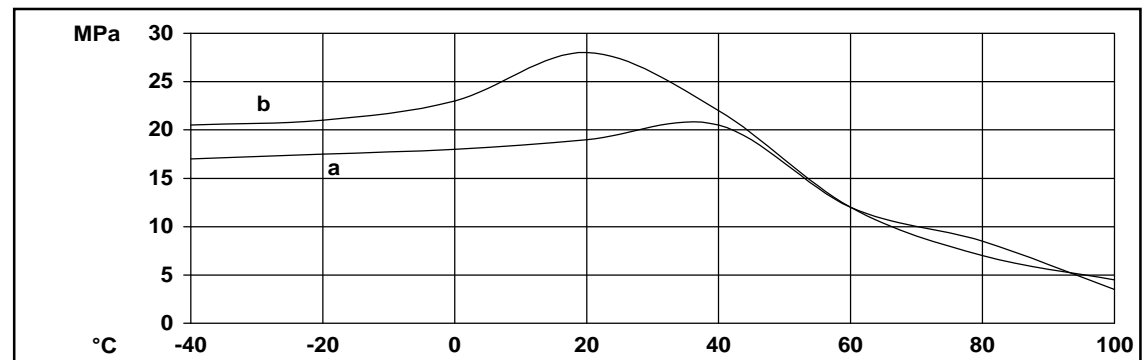
Average lap shear strengths of typical (ISO 4587)

Cure: 16 hour/40°C, tested at 23°C. Metals: Sand blasting, Non-metallic: Lightly abrade and alcohol degrease.



Lap shear strength versus temperature (ISO 4587) (typical average values)

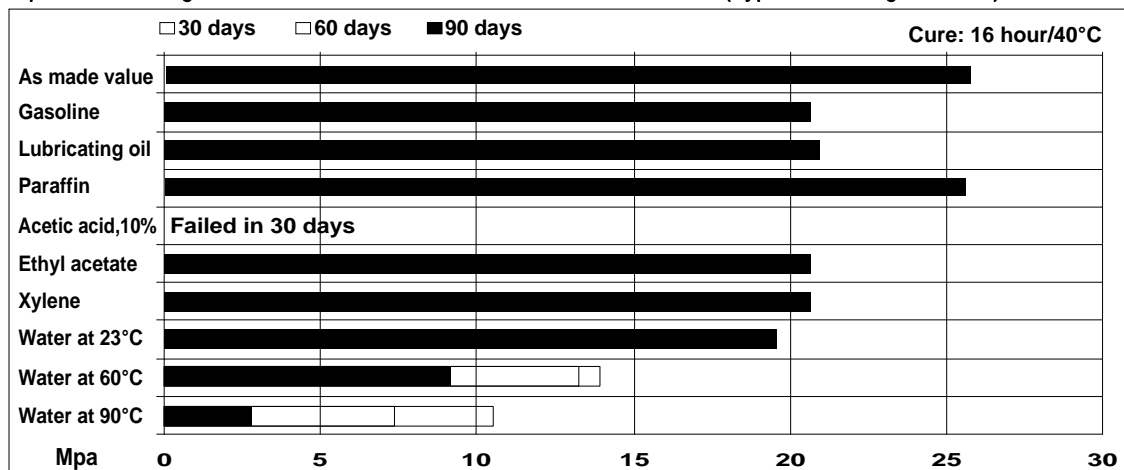
Cure: (a) 7 days/23°C, (b) 24 hours/23°C + 30 minutes/25°C



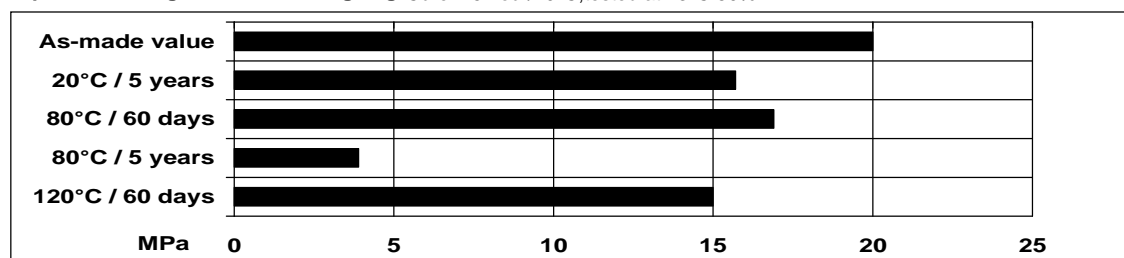
Other typical characteristics (typical average values) Cure: 16 hour/40°C, tested at 23°C

Rollr peel test	ISO4587	5.00 N/mm
Glass transition temperature		ca. 45 °C
Electrolytic corrosion	DIN 53489	
Test: 4 days in a conditioning chamber in 40/92 climate as specified by DIN 50015		
Rating according to specified standard		A-A/B 1,2
Minimum dielectric strength at 50 Hz, 24 °C		
Mix ratio Instantaneous value:	VSM77170	25-27 kv/mm
100:80 pbw 1-minute value:	VSM77170	25-27 kv/mm
Water vapour permeability (38 °C, 90% rh) Cure : 5 days/23 °C		
Test on a 1mm thick film	NF41001	16g/m ² /24 hours
Water absorption 24hours at 23 °C	ISO62-80	0.8%
Water absorption 30mins at 100 °C	ISO62-80	1.3%
Thermal conductivity	ISO8894/90	0.22W/m.K
Shear modulus	ISO4587	-5 °C - 1.5Gpa 0 °C - 1.2Gpa 50 °C - 0.2Gpa 100 °C - 7.0Mpa
Flexural Strength	ISO178	60Mpa
Flexural Modulus	ISO178	1900Mpa

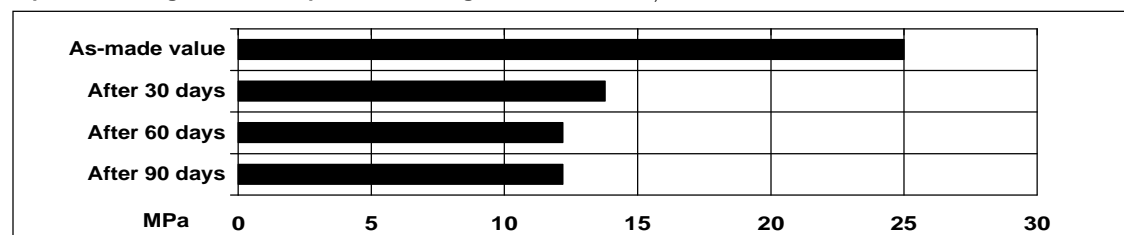
Lap shear strength versus immersion in various media at 23 °C (typical average values)



Lap shear strength versus heat ageing Cure: 16 hour/40°C, tested at 23°C 50% rh



Lap shear strength versus tropical weathering Cure: 16 hour/40°C, tested at 23°C



Storage

IX 28211 may be stored for up to 36 months at room temperature provided the components are stored in sealed containers. The expiry date is indicated on the label.

Handling precautions

Caution

Our products are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming in contact with the skin, since people with particularly sensitive skin may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper -not cloth towels -should be used to dry the skin. Adequate ventilation of the working area is recommended. These precautions are described in greater detail in the Material Safety Data Sheets for the individual products and should be referred to for fuller information.

All recommendations for the use of our products, whether given by us in writing, verbally, or to be implied from the results of tests carried out by us, are based on the current state of our knowledge. Notwithstanding any such recommendations the Buyer shall remain responsible for satisfying himself that the products as supplied by us are suitable for his intended process or purpose. Since we cannot control the application, use or processing of the products, we cannot accept responsibility therefor. The Buyer shall ensure that the intended use of the products will not infringe any third party's intellectual property rights. We warrant that our products are free from defects in accordance with and subject to our general conditions of supply.

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