



TECHNICAL DATA SHEET

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RUSCOE-WELD 1177, 1228, 1273

DESCRIPTION:

RuscoeWeld 1177 is a versatile two-part room temperature curing adhesive. The product cures in 8-16 hours at room temperature to provide a movable assembly or may be accelerated with heat. RuscoeWeld 1177 provides a hard, durable bond. Viscosity variations, 1228 and 1273 are available.

FEATURES:

- Easy to use, flowable paste
- Versatile; bonds many materials
- Serviceable to 180° F(82°C)
- Viscosity variations: RuscoeWeld 1228, RuscoeWeld 1273
 - RuscoeWeld 1228 has more flow, may be brushed
 - RuscoeWeld 1273 is more thixotropic, no run, no sag paste
- Color coded for easy mixing
- Mix ration for all three products is 1:1 by weight or volume within 5% accuracy
- Contains no solvents, no asbestos, 100% solids

USES:

RuscoeWeld 1177 conforms to MMM-A-134, Type I, Class 3, Form P, GR1, Rev A specifications.

RuscoeWeld 1273 conforms to MMM-A-132 TY1, CL3.

PHYSICAL PROPERTIES:

These adhesives are two-part equal mix products. After mixing, these adhesives become a uniform green color.

Green Portion - Resin

Cream Portion - Catalyst

	RUSCOEWELD 1177	RUSCOEWELD 1228	RUSCOEWELD 1273
Calculated Coverage per gal/mil	1600 SF	1600 SF	1600 SF
	(39.0m ² /liter/.0254mm)		
Weight per Gallon – Resin	11.4 lbs (1.4 kg/l)	9.5 lbs (1.1 kg/l)	11.5 lbs (1.4 kg/l)
Weight per Gallon-Catalyst	11.7 lbs (1.4 kg/l)	10.0 lbs (1.2 kg/l)	11.9 lbs (1.4 kg/l)
Viscosity (cps): Part A	41,500	15,000	1,500,000
Viscosity (cps): Part B	88,500	210,000	1,400,000

The following data was obtained by bonding chromic acid etched 2024-T3 Alclad aluminum with RuscoeWeld 1177 and testing in accordance with MMM-A-134, Type 1.

TEST	CONDITIONING	TEST TEMP.		MIL SPEC REQUIREMENTS		RUSCOEWELD 1177	
		°F	°C	PSI	MPa	PSI	MPa
Shear	30 min @ 67°F (-55°C)	-67	-55	1300	9.0	3030	20.9
Shear	Room Temperature	73	23	2500	17.2	2930	20.2
Shear	30 min @ 180°F (82°C)	180	82	1250	8.6	2320	16.0
Shear	60 min @ 160°F (71°C) 30 min @ -67°F (-55°C)	-67	-55	1800	12.4	3000	20.7
Shear	60 min @ 160°F (71°C)	73	23	2500	17.2	3300	22.8

APPLICATION:

Surface preparation

Prebond Treatments & Metal Cleaning

1. All surfaces should be free of wax, dirt and grease. The cleaning of metal surfaces may be accomplished by washing with clean solvent or with strong alkali detergent solution. Several of the heavy duty household cleaning compounds, such as Spic and Span, are suitable for use.

The cleaning of the metal surface should be continued until, when rinsed with clean water, a break free water film is formed on the surface with no special pretreatment.

2. Bonding to aluminum requires a special prebonding treatment. A suitable treatment is immersion in chromic acid solution for 10 minutes @ 160°F (71°C)

The chromic acid solution may be prepared by mixing 10 parts of concentrated sulfuric acid with 30 parts by weight of water. Add acid slowly to water with constant stirring during addition. After the acid-water mixture has cooled to below 120° (49°C), add 1 part weight of sodium or potassium dichromate.

After immersion in the chromic acid solution, the metal parts should be thoroughly rinsed in clean potable water. When available rinse water contains high solids, it is recommended the parts be given a final rinse in distilled water

Pickled parts should be force dried for 30 minutes @ 160°F (71°C) to remove all water film, or given a sufficient time to dry completely at room temperature.

When immersion of the parts to be bonded in acid pickle is not possible, make a heavy paste of the acid pickling solution and barytes (barium sulfate). Trowel the acid paste mixture onto the cleaned metal surface and allow it to stand for 30 minutes at room temperature. Rinse thoroughly and dry before bonding.

Caution: Chromic acid solutions are severely corrosive to the skin, eyes and all mucous membranes. All personnel using such solutions should wear rubber gloves and eye protection devices. Any spillage on the skin should be immediately removed thoroughly washing with soap and water. In cases of accidental ingestion, immediate flushing of the mouth with water should be done, and the individual should then be referred to a physician.

APPLICATION (CONTINUED):

Application of the Adhesive

Mixing Instructions

1. Stir each component in its container as received
2. Measure an equal volume or weight of each component into a suitable mixing container. Stir until the adhesive is a uniform green color and there are no streaks. Thorough mixing is important.
3. Do not use any solvent with this adhesive

Application to Part

1. Apply the mixed adhesive in a thin, even layer on each surface to be bonded. Press the adhesive coated surfaces together with sufficient pressure to assure adhesive contact over the entire area. A small amount of adhesive flow out at the edge of the bond line assures full contact. Any type of holding device which will maintain assembly in contact position during cure will be satisfactory for clamping. Only contact pressure is required during cure.
2. Any adhesive bond line thickness between .005" (.013cm) and .015" (.038cm) will give satisfactory bond strength. Beyond these limits, some loss of bond strength may be experienced.
3. Application of the adhesive may be conveniently accomplished by use of a putty knife, spatula, tongue depressor, or any other available flat-bladed applicator.
4. At a normal spread rate of 1600 SF per gallon (.001") (39.3m²/liter), one pint of mixed adhesive will yield 200 SF (19m²) of bonded area.
5. One spread coat applied to each surface is recommended.

Cure

The adhesive coated metal parts must be assembled within the time limit specified for pot life; that is, the total time between mixing the adhesive and final assembly should not exceed 6 hours @ 0°F (-18°C) 2 hours @ 73°F (23°C) or 50 minutes @ 100°F (38°C).

Cure may be accomplished with any of the following schedules:

- 24-48 hours @ 75°F (23°C)
- 4 hours @ 120°F (49°C)
- 1 hour @ 160°F (71°C)
- 30 minutes @ 220°F (104°C)
- 15 minutes @ 250°F (121°C)

High temperature cures may exhibit excessive flow-out of the adhesive resulting in a starved bond line with incomplete fill of the bonding area. This problem may be avoided by allowing the adhesive to cure initially at 120°F (49°C) or lower temperature before the application of heat. Curing time in excess of those listed in the foregoing will do no harm. Curing temperatures in excess of those listed are not recommended.

Pressure during cure is not critical. Do not squeeze excessive amounts of adhesive from the joint. Maintain enough pressure during cure to maintain the initial position of the parts assembled.

CLEAN UP:

Cleaning of the mixing and spreading equipment before the adhesive has cured may be easily accomplished by washing with Toluene, Ketone or any lacquer solvent.

STORAGE:

The unmixed adhesive in sealed containers may be stored at any temperature between 0°F (-18°C) and 100°F (38°C) for one year with no loss of bonding properties. After mixing the components in a total mass of 350 gram, the working pot life is over 6 hours at 0°F (-18°C), over 2 hours @ 73°F (23°C) and 50 minutes @ 100° (38°C).

PRECAUTIONS:

These adhesives may produce mild irritation of the skin and dermatitis after frequent and prolonged contact. Precautions should be taken to prevent skin contact in handling the catalyzed mixture. If accidental skin contact occurs during use, the contaminated skin areas should be washed immediately with soap and water. Any clothing contaminated by the adhesive should be removed and cleaned immediately.

Read Material Safety Data Sheet before handling, storing or using this product.

Important safety information – Read before using this product.

WARNING:

This product may cause skin sensitization, dermatitis, or other allergic responses. Prevent all contact with skin. If contact occurs, the contaminated skin areas should be washed immediately with soap and water. Any clothing contaminated by the epoxy should be removed and cleaned immediately. Avoid inhalation of vapor. Work area should be well ventilated **DANGER: PREVENT CONTACT WITH EYES. IF EYE CONTACT OCCURS, IMMEDIATELY FLUSH WITH WATER FOR 15 MINUTES AND SEEK PROMPT MEDICAL ATTENTION. THIS PRODUCT IS HARMFUL IF SWALLOWED AND CAN CAUSE SERIOUS PERSONAL INJURY. IF SWALLOWED, INDUCE VOMITING: SEE A PHYSICIAN IMMEDIATELY.**

PROTECTION: WEAR PROTECTIVE GLOVES, IMPERVIOUS TYPE EYE PROTECTION, SPLASH PROOF GOGGLES (ANS 1287.1 A968)

EMPTY CONTAINER AND WASTE DISPOSAL: Scrap must be stored in an isolated and segregated area while awaiting disposal and should, in no event, be mixed with other types of scrap. Disposal by an industrial wasted firm which is qualified to handle hazardous materials is recommended. Disposal must be by burial in accordance with state, local and federal regulations. Observe all of the above warnings and instructions with scrap material and empty containers. For industrial and professional use only. If resold or repackaged for household use, containers must be labeled in accordance with Federal Hazardous Substances Labeling Act and other laws.

All statements, technical information and recommendations contained herein are based on tests believed to be reliable, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties expressed or implied.

Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of, or the inability to use the product. Before using, user shall determine the suitability of the product for their intended use and user assumes all risk and liability whatsoever in connection therewith.

The foregoing may not be changed except by an agreement signed by officers of seller or manufacturer.