Application Instructions: ARC CFW-CR

Surface Preparation

- Identify the area to be repaired and ensure minimal active leaking is taking place. If grease or oil is present, it should be removed prior to further preparation steps.
- **Fiberglass:** Using a low grit sandpaper (40 – 60 grit) roughen up the area to be repaired. At least 1 inch past the repair section on both sides should be prepared.
- **Metal Immersion:** Ensure any oil or grease is removed. Abrasive Blast to an SSPC-SP 10 Near white metal blast with a sharp angular profile of 3-5 mils (75 – 125 microns).
- **Metal Atmospheric:** Ensure any oil or grease is removed. Minimum surface preparation of SSPC-SP 2 Hand Tool Cleaning must be performed. For enhanced performance, an SSPC-SP 6 Commercial Blast Cleaning with an angular surface profile of 1.5+ mils should be used.
- **Concrete Immersion/Secondary Containment:** Refer to SSPC-SP 13/NACE No. 6, Section 4.3.1 or ICRI No. 310.2, CSP 1-3 for concrete preparation guidelines. Surface should be thoroughly cleaned and dry. Concrete and mortar must be cured at least 28 days @ 75°F. Surface must be free of laitance, concrete dust, dirt, form release, curing aids and other foreign material. ARC 797 Primer/Sealer should be applied prior to coating at 5-10 mils to increase adhesion and reduce outgassing.
- **Concrete - Atmospheric Corrosion:** Refer to SSPC-SP 13/NACE No. 6, Section 4.3.1 or ICRI No. 310.2, CSP 1-3 for concrete preparation guidelines. ARC 797 is not required but recommended for improved adhesion and aesthetics.

Mixing

To facilitate mixing and application, material temperatures should be between 21°- 32°C (70°-90°F). Each kit contains two-part components which are packaged to the proper mix ratio. If further proportioning is required, the kit should be divided according to the below mix ratios:

	By Weight (A:B)	By Volume (A:B)
ARC 858	4:1	4:1
ARC CFW-HT	2.1:1	1.9:1

Pour all of Part B Hardener into Part A Resin. Mix for 2-3 minutes. Stop and scrape sides of container, then mix for an additional 2-3 minutes. Dilution or thinning to aid application is strictly forbidden.

For bulk size units, the impregnation ratio is 1 gallon of mixed resin per 60 ft^2 of fiber (carbon or glass).

Typical consumption:

- 3 gallons of mixed resin per 12" x 150 ft roll
- 6 gallons of mixed resin per 25" x 150 ft roll

Working Time / Potlife

	10C / 50F	24C / 75C	38C / 100F
ARC 858	1 hr.	30 min.	20 min.
ARC CFW-CR	90 min.	30 min.	15 min.

The CR resin cures relatively fast, mix 1 gallon at a time if using a single saturator.

Application – Faring Compound

- Prior to applying saturated glass or carbon fiber wrap make sure to fill in any pits or corroded weld regions using ARC 858 faring compound.
- Apply the material in successive layers if pitting is deep, to avoid air entrapment. Finish flush with surface.
- Allow AR 858 to cure to tack free stage before commencing to wrap stage.

Application – Saturating Wrap

- To ensure proper saturation you will need a clean, non-porous table with a surface area sufficient to allow laying out and pre-wetting the glass and carbon fibers. HDPE sheet of a tightly stretched polyethylene film applied to finish plywood will give you a smooth, level, and non-porous surface.
- Remove the cardboard fiber cores from the rolls of ARC GF & CF. Place aside for later use.
- If doing pipe wrap repairs, cut GF and CF matt to lengths 6" greater than pipe diameter to ensure a suitable overlap between layers. If doing flat work, cut faber lengths so they extend beyond repair area a minimum of

3" on each side.

- Pour out a 2-4" wide ribbon of the saturating resin on to the saturating table surface, as long as your cut fiber lengths.
- Spread this material evenly on surface and lay fiber mat onto wetted surface.
- Pour additional saturating resin onto fiber mat and force the resin into the mat weave using plastic applicator to fully saturate the surface. No dry areas should be evident.
- Preserve sufficient saturating resin to apply an 8-12 mil wet film onto the pipe and any applied ARC 858. Avoid drips and sags.
- Roll the section of saturated fiber back onto cardboard core making sure you roll it evenly onto core. Center the wrap repair over the damaged area.
- Unwind the saturated fiber onto the pipe, starting at the "12 o'clock" position taking the saturated fiber material off the top of the wrapped core.
- As you roll the fiber onto the surface, manually flatten the fiber wrap onto the surface using gloved hands or phenolic core rollers. Eliminate any air bubbles as the wrap is unwound onto the surface. All smoothing with your hands or rollers must be in the same direction of the unrolled fiber as it was placed. This will eliminate the air bubbles. We recommend two people work either side of the pipe while the wrapping process is underway.
- If using multiple layers allow for a 3-4" (<150 psi) or 4-6" (>150 psi) overlap between each wrap to ensure continuous protection. Always apply each layer in the same direction to avoid wrinkling.
- Apply all layers wet-on-wet whenever possible.
- For long repair lengths (e.g., 100 ft), wrap all 4 layers over 25 ft per day instead of 1 layer over 100 ft each day.

Note: A minimum of 4 carbon fiber layers is required for an air- and water-tight system, or when internal corrosion is identified as the source.

Cure Schedule

	10C / 50F	24C / 75F	38C / 100F
Tack Free	**9 hrs.**	**5 hrs.**	**2 hrs.**
Light Load	**24 hrs.**	**12 hrs.**	**6 hrs.**
Overcoat End	**168 hrs.**	**96 hrs.**	**72 hrs.**
Return to Service Cure	**NA**	**48 hrs.**	**24 hrs.**
Full Chemical Cure	**NA**	**96 hrs.**	**72 hrs.**

Top Coating

- When applying a subsequent topcoat over fiber wrap allow fiber wrap to cure to light load stage stated above, before commencing topcoat application. This will ensure wrap repair is not disturbed prior to full cure.

Coverage

Each kit has sufficient fiber mat and saturating resin to cover up to 20ft^2.

Storage and Shelf Life

ARC 858 and CFW-CR should be stored between 10-38C (50-100F) indoors and out of direct sunlight. All components should be brought to ambient temperatures at least 24 hours prior to mixing and use. Shelf life is 2 years from date of manufacture.

Cleanup

Use commercial solvents (Acetone, Xylene, Alcohol, Methyl Ethyl Ketone) to clean tools immediately after use. Once cured, the material would have to be abraded off.

Safety

Before using any products, review the appropriate Safety Data Sheet (SDS) or Safety Sheet for your area. Follow standard confined space entry and work procedures, if appropriate.

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