An ISO 9001:2015
Certified Supplier

# PRODUCT TECHNICAL DATA SHEET

# Aquawrap® Black™

## High Strength/Modulus Carbon Fabric Construction

Aquawrap® Black™ is a high strength high modulus repair and reinforcement system for existing mechanical systems, structures and piping. This product is especially suited for the economical repair of large piping systems. Furnished factory-impregnated with our proprietary urethane resin system. It is odorless and solvent-free. Cured Aquawrap® is a very durable, high long term strength material, impervious to fuels, most chemicals and solvents. It permanently bonds to a wide variety of surfaces such as metals, composites, concrete, plastics and wood. Aquawrap® is ready to apply, right out of the bag and cures by way of a chemical reaction with field-applied water. This offers considerable advantages over conventional cloth-resin systems in that there is no resin measuring, mixing, spreading, solvents, or dripping polymer mess.

| PRODUCT PROPERTIES | | | |
|---|---|---|---|
| **Working Time:** | 30-40 min. at 25°C (77°F) | **Mix Ratio:** | No mixing required |
| **Application Temps:** | 4-93°C (40-200°F) | **Service Temps:** | -50 - 121°C (-58 250°F) |
| **Cure Time** (dry to touch)**:** | 30-60 minutes at 25°C (77°F) | **Full Cure:** | 1 days at 25°C (77°F) |
| **Usual Packaging:** | Pre-Packaged Rolls | **Shelf Life:** | 1 year |
| **Chemical Resistance:** | oils, mek, toluene, gasoline, ethyl alcohol and many others | **Nominal Hardness:** | 85-95 Shore D - ASTM D-2240 |

| TEST | C-3 TAPE | C-2 FABRIC |
|---|---|---|
| **Tensile Strength** (warp direction). psi | 53524 | 61760 |
| **Tensile Strength** (fill direction), psi | 53524 | 29220 |
| **Tensile Modulus** (warp direction), msi | 4.2 | 4.5 |
| **Tensile Modulus** (fill direction), msi | 4.2 | 4.6 |
| **Tensile load per ply** (warp direction), pounds per inch of width | 1233 | 2717 |
| **Tensile load per ply** (fill direction), pounds per inch of width | 1233 | 1285 |
| **Thickness**, mils (nominal) | 17 | 44 |
| **HDT**, $^{O}F$ | 325 | 325 |
| **CTE**,in/in $^{O}F$ | est. $6.6 \times 10^{-6}$ | $6.6 \times 10^{-6}$ |
| **Tg** $^{O}F$ | 288 | 288 |
| **Bond strength to steel with BP-1 Adhesive**, psi | 1353 | 1353 |

**ATTENTION:** All of the following data are based on laboratory conditions, at room temperature. Field conditions can radically change the characteristics of this product. Higher temperatures will lessen the working life of the product. Allow adequate time for application. Field testing is strongly recommended prior to application.

## Design and Application Instructions

Design guidelines, application notes and wrap calculations for various applications are available from the factory.

## Storage

Store at 60-90° F in a dry place. Do not freeze. Dispose of any leftover material.

## Handling

Aquawrap® is shipped in a sealed protective bag to protect it from atmospheric moisture. Because it cures with the application of water (and air humidity), care must be taken in handling the sealed bags to prevent puncturing or scuffing, which would cause the product to cure in the bag. Once the bag is opened and the Aquawrap® is exposed to the humidity in the air, it will begin to cure and will gel within about 60 minutes. Therefore, work must be well planned prior to opening the bag. Aquawrap® requires no other special handling or application procedures. This resin is slightly irritating to certain sensitive people; it will give off a small amount of carbon dioxide vapor while curing; and the cured resin is permanent and very difficult to remove, so gloves, safety glasses and other personnel protection equipment appropriate for the task must be used.

## Shelf Life

12 months from date of sale, in an unopened package, stored in cool warehouse conditions.

**Caution** – Read MSDS prior to use. Some persons may be irritated by this product. Use caution and PPE. This product is for industrial use by professionally trained personnel only. Please read and understand all application instructions prior to using.

## Warranty

The manufacturer warrants that the goods delivered hereunder shall be free from defects in material and workmanship. The WARRANTY shall extend for a period of one (1) year after date of delivery of such goods to customer. This warranty is void in the event that the protective pouch has been damaged. THE MANUFACTURER MAKES NO WARRANTY EXPRESS, IMPLIED, (INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR INTENDED PURPOSE), OR STATUTORY, OTHER THAN THE FOREGOING EXPRESS WARRANTY. Failure of customer to submit any claim hereunder within the Warranty Period after receipt of such goods shall be an admission by customer and conclusive proof that such articles are in every respect as warranted and shall release the manufacturer from any and all claims for damage or loss sustained by customer. In the event customer submits a claim for defective material within the required Warranty Period, the parties agree that customer's sole and exclusive remedy shall be the replacement of such defective goods or a refund of the price of the defective goods. To the greatest extent practical defective goods shall be returned to the manufacturer for analysis. IN NO EVENT SHALL THE MANUFACTURER BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OR SPECIAL, INDIRECT OR INCIDENTAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY, NON-DELIVERY, LOSS OF USE OF GOODS OR ANY PART THEREOF, EVEN THOUGH THE MANUFACTURER HAS BEEN NEGLIGENT OR HAS BEEN INFORMED OF CIRCUMSTANCES WHICH MIGHT GIVE RISE TO SUCH DAMAGES.

Data and parameters listed herein and in our data sheets have been obtained by Field-Applied Composite Systems LLC using materials under carefully controlled conditions. Data of this type should not be used by engineers as design specifications, but rather as indicative of ultimate properties obtainable. Before using, user should determine the suitability of the product for its intended use. In determining whether the material is suited for a particular use, such factors as overall application configuration and design, field conditions and environmental criteria to which it will be subjected should be considered by the user.

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