

## Hypaflex® Flexible Membrane Specification

### Hypaflex® Pond Liners

Hypaflex® (chlorosulfonated polyethylene) is the most durable flexible pond liner/cover material yet developed. Field installations and accelerated aging tests by Burke Environmental Products, the leading pond liner/cover manufacturer, have demonstrated that under most conditions Hypaflex® liners and covers have an extremely long service life. So for the most demanding liner/cover Jobs, or where other liners or covers failed, Hypaflex® from Burke is the answer.

### Weather Resistance

Hypaflex® synthetic rubber - regardless of color - will resist the elements better than any known material now used for liners or covers. It is exceptionally resistant to oxidation, and is virtually immune to ozone and ultraviolet light.

### Chemical Resistance

Compounds of Hypaflex® resist a wide range of organic and inorganic chemicals. Hypaflex® has, for many years, proved to be suitable for the containment of a large variety of industrial wastes.

### Low Temperature

Compounds of Hypaflex® retain their flexibility at low temperatures. Repeated cycles of freezing and thawing do not cause mechanical damage even under tension

Burke Hypaflex® can be compounded in white and attractive light colors without sacrificing its desirable properties. Colored products of Hypaflex® have been weathered outdoors for many years with minimal fading or discoloration.

### Construction

Hypaflex® pond liners are made from a special polymer that is compounded, fabricated and installed in a thermoplastic state.. Factory seam fabrication, under controlled conditions, is done by a precise combination of heat and pressure. Field seaming uses a bodied solvent adhesive following a pre-wash to give equally reliable results under the varying weather conditions encountered during installation. After installation, a surface cross-linking develops which produces a stronger, tougher, and more weatherable liner.



|  | <b>Product</b>       | <b>M-283</b>    | <b>M-284</b>    | <b>M-423</b>    | <b>M-529</b>    | <b>M-530</b>    |
|--|----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| <b>PHYSICAL PROPERTIES</b><br><i>(interim values, subject to change)</i> | <b>Mil Thickness</b> | 36              | 45              | 60              | 60              | 90              |
|  | <b>Plies</b>         | 3               | 3               | 3               | 5               | 5               |
|  | <b>Scrim Type</b>    | 10x10x<br>1000D | 10x10x<br>1000D | 10x10x<br>1000D | 10x10x<br>1000D | 10x10x<br>1000D |

| <b>PROPERTY</b>                               | <b>TEST METHOD</b>  | <b>M-283</b>                      | <b>M-284</b>                       | <b>M-423</b>                       | <b>M-529</b>                       | <b>M-530</b>                       |
|---|---|-----------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Total Plies                                   |   | 3                                 | 3                                  | 3                                  | 5                                  | 5                                  |
| Mil Thickness (nominal)                       |   | 36                                | 45                                 | 60                                 | 60                                 | 90                                 |
| Plies - Reinforcing                           |   | 1                                 | 1                                  | 1                                  | 2                                  | 2                                  |
| Thickness (mils min)                          | ASTM D751   |                                   |                                    |                                    |                                    |                                    |
| Minimum                                       | Optical Method  | 32                                | 41                                 | 56                                 | 56                                 | 86                                 |
| Minimum                                       | Over Scrim  | 12                                | 15                                 | 23                                 | 13                                 | 18                                 |
| Breaking Strength<br>(pounds min)             | ASTM D751<br>Grab Method                                  | 200                               | 250                                | 300                                | 425                                | 500                                |
| Elongation at Break<br>(% min)                |   |                                   |                                    |                                    |                                    |                                    |
| Machine                                       | Direction   | 30                                | 60                                 | 75                                 | 65                                 | 80                                 |
| Cross   | Direction   | 30                                | 60                                 | 75                                 | 65                                 | 80                                 |
| Tear Propagation<br>(pounds min)              | ASTM D751<br>Tongue Tear<br>8x8 Sample                    | 60                                | 80                                 | 80                                 | 130                                | 130                                |
| Hydrostatic Pressure<br>(min resistance, psi) | ASTM D751<br>Method A<br>Procedure 1                      | 200                               | 375                                | 400                                | 500                                | 550                                |
| Puncture Resistance<br>(pounds typical)       | FTMS 101B<br>Method 2031                                  | 200                               | 225                                | 250                                | 400                                | 450                                |
| Bounded Seam Strength<br>(pounds min)         | ASTM D751<br>Modified<br>(12 in/min)                      | 140                               | 225                                | 300                                | 350                                | 500                                |
| Ply Adhesion<br>(lbs/in-width min)            | ASTM D143<br>Machine Method<br>Type A<br>(12in/min)       | 6 (or<br>Film<br>Tearing<br>Bond) | 10 (or<br>Film<br>Tearing<br>Bond) | 10 (or<br>Film<br>Tearing<br>Bond) | 10 (or<br>Film<br>Tearing<br>Bond) | 10 (or<br>Film<br>Tearing<br>Bond) |
| Ozone Resistance                              | ASTM D1149<br>1/8" Bent Loop<br>100 PPHM<br>104°F, 7 days | Pass                              | Pass                               | Pass                               | Pass                               | Pass                               |
| Low Temperature                               | ASTM D2136<br>1/8" Mandrel<br>4 hrs @ -40°F               | Pass                              | Pass                               | Pass                               | Pass                               | Pass                               |

*Specification tables on page 2 of this document represent current opinion of the data points to characterize the membrane product as produced and are not necessarily appropriate for product performance or installation or engineering design criteria "per se". (For example, the low temperature resistance numbers represent qualities for a few minutes at a given temperature and must not be interpreted or extrapolated into installation temperature qualities or comparisons).*

*\*Minimum specification limits are currently proposed industry standards for this type of flexible membrane product. Burke Quality Control monitoring limits for this specification are based on a minimum 97.7% one-sided confidence level.*