

## **DrainLINER TECHNICAL DATA**

|                                      |   |
|--------------------------------------|---|
| DESCRIPTION OF LINER MATERIAL:       | Needle Felt backed with either polyurethane or PVC.                         |
| DESCRIPTION OF RESIN:                | High Performance Polyester Isophthalic Resin with good chemical resistance. |
| ADDITIVES TO RESIN:                  | NL63-10 Accelerator; Cadox40E Catalyst / Activator                          |
| METHOD OF RESIN MIXING/IMPREGNATION: | On site mixing and tube impregnation.                                       |
| METHOD OF REIN CURING:               | "Cold-cure" at ambient temperature  |

### **STRUCTURAL DESIGN CONSIDERATION**

The thickness of the Lining material may be altered to deal with differing loading situations. The table below gives the thickness required based on the following assumptions:

1. A perfectly circular pipe
2. Full side support
3. Saturated soil conditions

| <b>Pipe diameter</b> | <b>Drain Depth 1-2m</b> | <b>Drain Depth 2-3m</b> | <b>Drain Depth 3-4m</b> | <b>Drain Depth 4-5m</b> |
|----------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| 100mm                | 3mm                     | 3mm                     | 3mm                     | 3mm                     |
| 150mm                | 3mm                     | 3mm                     | 3mm                     | 4mm                     |
| 200mm                | 6mm                     | 6mm                     | 6mm                     | 6mm                     |
| 225mm                | 6mm                     | 6mm                     | 6mm                     | 6mm                     |
| 250mm                | 6mm                     | 6mm                     | 6mm                     | 6mm                     |
| 300mm                | 6mm                     | 6mm                     | 6mm                     | 7mm                     |

We can, on request, provide formulae for calculating the maximum pressure sustainable by various liner wall thicknesses. This could be of particular importance in extreme ground condition or if the pipe to be relined is deformed or has sections missing.

### **HYDRAULIC DESIGN CONSIDERATION**

In most cases, **DrainLINER** improves the flow characteristics of the pipe despite the slightly reduced diameter. This is due to the smoothness of the liner and the lack of joints. When using the Colebrook-White formula, with the liner slimed to half-full at a velocity of between 0.5 to 1.0 m/second, the roughness coefficient (K) is approximately 1.0mm whereas the K-factor of clay and concrete pipe is 1.5mm.