

DUNLOP MANCHONS

INNER RUBBER LININGS

SAFETY. DEPENDABILITY. QUALITY.

The failure of a high-pressure hose during operation can be life threatening. Safety must always be paramount. There can be no compromise whatsoever when it comes to dependability and quality of the end product.

GLOBALLY RECOGNIZED

Manufacturers all over the world use Dunlop Manchons.



BETTER ELONGATION PROPERTIES

EPDM



SMOOTH INNER SURFACE

OPTIMUM WATER FLOW



OZONE AND UV

RESISTANCE

The users have to be absolutely certain that the hose will not let them down at a critical moment.

It is for this very reason that Dunlop inner rubber linings (Manchons) for fabric covered pressure hoses are manufactured using first class production technology, the highest quality raw materials, and the most strenuous quality control processes imaginable.

Produced exclusively in our manufacturing plant in The Netherlands, Dunlop Manchons are specifically designed and engineered for use in a variety of applications and are designed to perform under the most demanding conditions.

Each Manchon comprises of two components. The vulcanized black rubber liner is made using 100% top quality grade EPDM (Ethylene Propylene Diene Monomer) rubber, designed to withstand extreme pressures. This is covered by a unique, white, un-vulcanized 'dry' adhesion layer. During the actual vulcanization of the hose it will obtain its permanent physical properties and its ultra-strong adhesion to the fabric. A carefully monitored production process ensures that Dunlop Manchons can always be relied upon to provide outstanding performance whenever they are called into action.

Dunlop Manchons are designed for use in a variety of hoses that have fabrics with different types of yarn including polyester and nylon. This means that they can be used for a wide range of applications. Using an almost identical process to that used for Dunlop EPDM Manchons, Dunlop Manchons are also available with oil and chemical resistant rubber. More detailed information on the different kinds of oils and chemicals is available on request.



QUALITY IN THE MAKING

Dunlop Manchons are manufactured by the most experienced production workforce in the industry, using the following 'Five Star' quality principles.

- ▶ Only top quality raw materials are used.
- ▶ Every rubber compound has been developed using a unique understanding of the final intended use so that Dunlop Manchons out-perform all others.
- ▶ Each compound batch is laboratory tested for quality before it is released for processing.
- ▶ Every chemical additive used complies with **REACH** health & safety regulation EC 1907/2006.
- ▶ Every meter of Dunlop Manchon undergoes stringent quality checks throughout the production process.



OUTSTANDING TECHNICAL SUPPORT

The Dunlop team of specialist technicians and application engineers includes some of the world's leading experts in rubber hose lining technology. This team provides the highest level of technical guidance and customer support.

HELPLINE
+31 (0) 512 585 555

ADDITIONAL INFORMATION
WWW.DUNLOPCB.COM

We are never more than a phone call away when our customers need our help or advice. This service is extremely well supported by our extensive network of highly reputable Dunlop Authorised Distributors, Vulcanisers and Approved Agents.



TECHNICAL INFORMATION

STANDARD DIMENSIONS AND WEIGHT

Liner thickness: **0.55 mm (-0.05/+0.05)** | Adhesion layer thickness: **0.25 – 0.35 mm** | Total thickness: **0.85 mm (-0.10/+0.10)**

Diameter (mm)	Flat width (mm)	Weight (g/m) EPDM
16	22 ± 2	43 ± 4
19	26 ± 2	52 ± 6
22	28 ± 2	56 ± 6
25	31 ± 2	63 ± 6
32	40 ± 2	80 ± 6
38	50 ± 2	100 ± 9
42	54 ± 2	112 ± 9
45	59 ± 2	123 ± 9
52	69 ± 2	144 ± 12
55	79 ± 2	155 ± 12
63	87 ± 2	184 ± 12
70	99 ± 2	204 ± 12
75	107 ± 2	207 ± 12
85	117 ± 3	244 ± 12
89	126 ± 3	251 ± 12
102	143 ± 4	276 ± 24
110	150 ± 4	295 ± 24
125	179 ± 5	346 ± 24
150	206 ± 6	394 ± 24

Run lengths: up to 2650 meter per pallet. Please note that this depends on the Manchon diameter and thickness. Non-standard dimensions (diameter and thickness) available upon request.

ADHESION LAYER

Dunlop Manchons are designed for use in a variety of hoses that have fabrics with different types of yarn including polyester and nylon. This means that they can be used for a wide range of applications. Using an almost identical process to that used for Dunlop EPDM Manchons, Dunlop Manchons are also available with oil and chemical resistant rubber. More detailed information on the different kinds of oils and chemicals is available on request.

- Heat transfer (type of curing equipment);
- Yarn type;
- Fabric construction;
- Moisture content of the fabric;
- Cure time, temperature and pressure.

The optimum adhesion results are obtained with adhesive activated polyester (PES) or nylon (PA) yarns (3 to 5 N/mm).

Generally mixed fabrics (bare polyester in the wrap and adhesive activated polyester in the weft) are used and give excellent adhesion results (2 to 4 N/mm).

Hardness [*shore]	60 ± 5
Tensile strength [MPa]	12.0–18.5
Tear strength [MPa]	> 5.0
Elongation at break [%]	500-650
Modulus 300% [MPa]	8.5–11.0
Permanent set [%]	< 35

Dunlop manchons are REACH compliant. The manchons have been calculated with new software according to the REACH and CLP regulations and contains no CMR materials.



BENEFITS THE KEY ADVANTAGES OF THE DUNLOP MANCHONS

1. **Low friction loss as a result of the two-component system (low distortion of the liner surface due to the refashion ability of the adhesion layer during curing);**
2. **Clean processing;**
3. **Solvent and solution free processing;**
4. **High flexibility;**
5. **Long shelf life;**
6. **Large variety of deliverable dimensions;**
7. **Excellent mechanical properties including tensile strength, elongation at break, abrasion resistance and permanent set;**
8. **Excellent ageing properties when exposed to high or low temperatures; U.V.- radiation, Ozone, Seawater or Chemicals.**

STORAGE

Dunlop Manchons have a shelf life of five months after date of production (printed on the packaging), provided they are correctly stored at temperatures between 5°C and 15°C. Prolonged storage, high temperatures, high level of humidity or direct contact with sunlight can cause stickiness and premature vulcanization of the unvulcanized adhesion layer.

PROCESSING

Dunlop Manchons should be cured **without** treatment with solvents or solvent-based additives. Steam or infrared (IR) facilities can be used for curing. The actual cure time will depend on:

- Type of curing facility (heat transfer and temperature);
- Yarn type;
- Fabric construction;
- Moisture content of the fabric;
- Hose dimensions.

For vulcanization by means of steam, Dunlop recommends 3 minutes of curing at 3 Bar, followed by 8 minutes at 6 Bar. Depending on individual circumstances, the curing time can be reduced whilst still giving satisfactory results. In order to achieve optimal results with Manchons, Dunlop offers technical support concerning processing and testing.

All information and recommendations in this bulletin have been supplied to the best of our knowledge, as accurately as possible and updated to reflect the most recent technological developments. We cannot accept any responsibility for recommendations based solely on this document.