

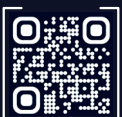
# mandals

since 1775

A Michelin Group Company

World Class Lay-Flat Hoses

# Agriculture



[www.mandals.com](http://www.mandals.com)

Legacy Through Innovation



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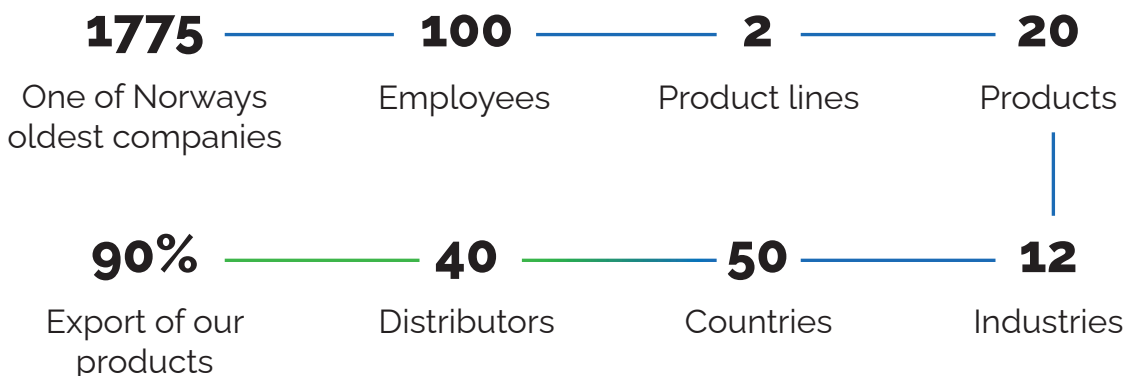
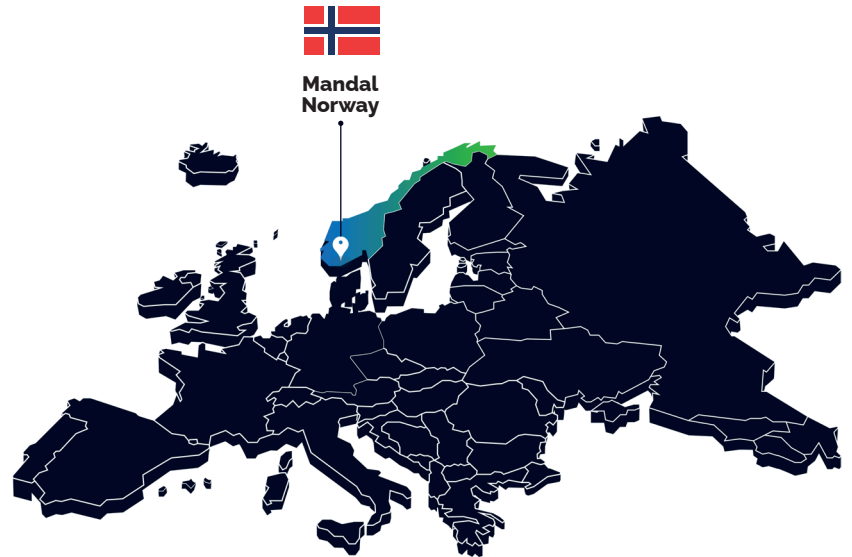
## Abbreviations

<b>AG</b>	Agriculture
<b>HVT</b>	High Volume Transfer
<b>NBR</b>	Nitrile Rubber
<b>TPU</b>	Thermoplastic Polyurethane

# About Us

Mandals specializes in the manufacturing of high quality lay-flat hoses, liners, and circular shuttle looms. We are based in Mandal, on the southern coast of Norway and have been in business in the same location for nearly 250 years.

We have come a long way since our establishment in 1775, and today we are one of the world's most recognized manufacturers of lay-flat hoses and looms. 90% of our products are exported and are found across the globe thanks to our long-standing partners and distributors.



# Why Mandals

We strive to grow long-term, loyal partnerships. Our core values are People, Planet and Profit and we will always focus on people first. As a partner with Mandals we will do our best to put you first, aiming to offer you the best service in all aspects of the partnership. We expect active partners that will challenge, inspire, and help us grow and build business together.

We define ourselves as a trustworthy supplier with high focus on quality in the production process and products. All lay-flat hoses and looms are produced in-house, meaning that you can be assured we produce quality without compromise.

## Our Materials

### Rubber Hoses

Mandals rubber hoses are made from a blend of nitrile rubber and PVC, with an added UV barrier. The rubber is fully extruded through the circular woven fabric, ensuring excellent bonding between cover and lining to prevent delamination. Thanks to the interlocking between the warp yarns and the weft of the circular weave, the hose has a high lengthwise stability and a full diameter recovery after use. The abrasion and puncture resistance of Mandals rubber hose is by far superior to any regular uncovered textile hose.

### TPU Hoses

Our TPU hoses are among the most innovative lay-flat hoses in the world, which are made from extruded thermoplastic polyurethane (TPU) with excellent wear and tear properties. The TPU is extruded through the weave, which is made of high tenacity filament polyester yarns. This method gives a very strong bonding between cover and lining as well as firmly encapsulating the woven polyester yarn. The abrasion resistance of the Mandals TPU hoses is among the highest available, and our TPU hoses also have excellent resistance against the most commonly used chemicals, UV radiation, hydrolysis, and fungus degradation.

### Rubber Hoses



### Thermoplastic Polyurethane (TPU) Hoses



# Our Agriculture Hoses

## Dragman Series

TPU Drag Line



## Superman HVT

TPU Supply Line



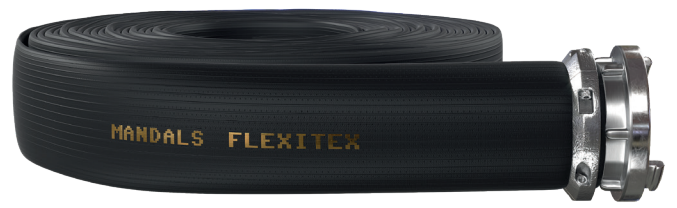
## Ultraman & Ultraman HVT

Multipurpose TPU Transfer Hose



## Flexitex Series

Rubber Supply Line



# Advantages of Mandals Hoses

Quick deployment and retrieval, combined with **excellent flow rates** and long lifetime, **reduces operation cost**

**High abrasion resistance** and tensile strength

**Excellent mechanical adhesion** between the layers provides the best quality hose with a long lifetime

**Highly flexible hoses** = Kink resistant and minimal pressure loss



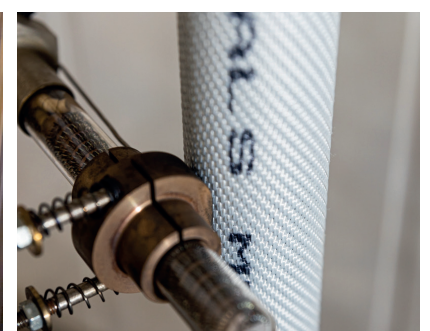
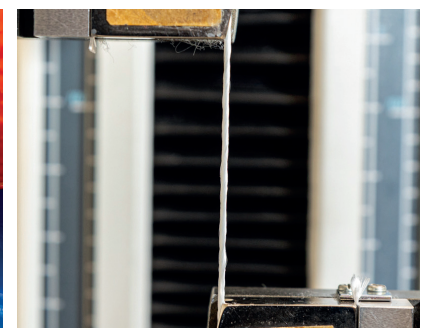
## Quality

One of the values we live by is **"Legacy Through Innovation"**, meaning that we will always work to further develop our products, our production processes and the way we do business with our partners. We are following the trends in the market and continuously working to develop new products and solutions for our customers' unique challenges.

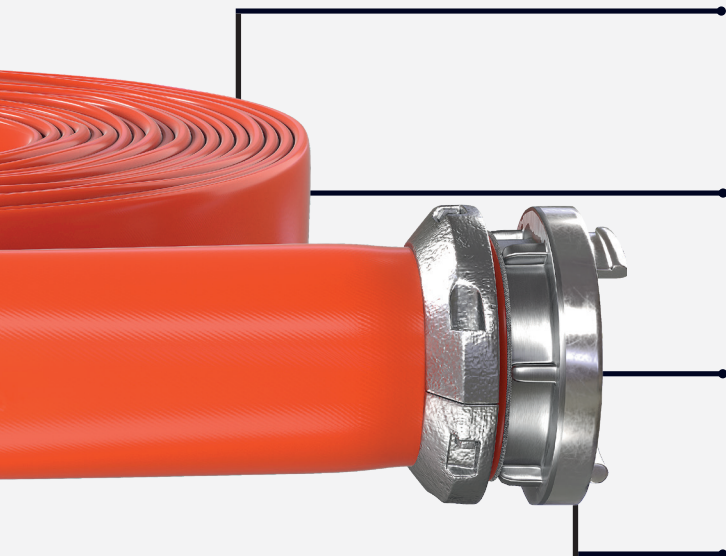
**Raw materials and finished products are tested and documented according to international standards.**

### Examples:

ISO 4671 - methods of measurement  
 ISO 1402 - hydrostatic testing  
 ISO 8033 - adhesion  
 BS 6391 - abrasion  
 NS 4016 - heat resistance



Long lasting hoses for demanding use require **durability** and **wear resistance**



**Resistant to most industrial chemicals, ozone, and UV-rays**

Durable even in the **roughest environments**

**Small logistical footprint** required for transport and storage

**Unique weave design** that is specially developed for each hose

**Easy to handle** - less heavy lifting

## Looms & Spares

We pioneered the lay-flat hose a century ago and developed our first circular loom in 1935. Today you can find our machines in over 30 countries, some of which have been in service for over 50 years. Our machines continue to define the standard for quality and reliability in circular looms.



Scan the QR code if you would like to know more about our looms



# Agriculture

## Lay-Flat Hoses



# Umbilical Drag Hose System

**Dragman Standard** has a medium thickness of TPU. This gives good abrasive resistance and long service life on a soil not too abrasive and rough. Very high tensile strength and low kink radius.

**Dragman Premium** is designed to handle smaller fields effectively, with a superior kink resistance on sharper turns. It has high TPU thickness and adhesion, giving an optimal resistance to wear and tear even on rougher surfaces.

**Dragman Extra Performance** has increased TPU cover thickness, optimal for larger fields and rockier soils. This gives a hose with added strength and resistance to wear and tear.

**Mandals Superman HVT** is a hose intended for large volume transfer under high pressure and is widely used as supply hoses for large agricultural systems.

**Mandals Ultraman** is a multipurpose transfer hose, which is suitable as a feeder hose or even as a drag hose in smaller umbilical systems.

**Mandals Flexitex Standard** is a general purpose hose for use in agricultural systems.

**Mandals Flexitex Extra** is a more reinforced fluid transfer hose for agricultural systems, but may also serve as a drag hose in smaller umbilical systems.

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Dragman (series)

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Superman HVT

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Ultraman HVT

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Ultraman

Page **17**



Flexitex (series)



# Drag Line

## Dragman Series

### TPU Hoses

Our Dragman hoses are high quality flexible lay-flat hoses designed for especially rough use with umbilical drag hose systems for distribution of slurry and manure in agricultural fields. Hoses are connected between slurry reservoirs (lagoons), where the drag hoses are used closest to the tow tractor. Between the lagoon and the edge of the field, the slurry/manure is transferred using supply line hoses.



**High Diameter and Dimension Stability**



**Easy to Deploy and Store**



**Great Adhesion and Tensile Strength**



**High Abrasion and Kink Resistance**



**Excellent UV and Weather Resistance**



**High Puncture Resistance**



**Long Lifetime and Low Maintenance**



**High Quality Materials**

### Primary Uses & Applications

- Umbilical drag systems.
- Distribution of slurry and manure.

### Features

- Low kink radius.
- Designed to withstand the extreme tensile loads and abrasion seen in umbilical slurry systems.
- High diameter and extension stability.
- High puncture resistance.
- Excellent UV and weathering resistance.

### Construction

- Covered and lined with Thermoplastic Polyurethane (TPU).
- Extrusion through the weave technology - ensuring excellent adhesion between TPU and the weave.
- Heavily reinforced weave ensuring required longitudinal tensile strength and burst pressure.

### Properties

- Lengths up to 600m for some dimensions.
- Color options: Orange (standard).
- Operating temperature from  $-50^{\circ}\text{C}$  to  $+65^{\circ}\text{C}$  ( $-58^{\circ}\text{F}$  to  $+149^{\circ}\text{F}$ ).

Thermoplastic polyether  
polyurethane



Engineered with excellent  
tensile strength and  
abrasion properties

Extruded through  
a circular woven  
jacket

## Dragman Standard

Article Number	Inner Diameter		Wall Thickness		Weight		Maximum Working Pressure		Burst Pressure		Nom. Tensile Strength	
	inch	mm	inch	mm	lbs / ft	kg / m	psi	bar	psi	bar	X1000 lbs	X1000 kg
DRS090	3 1/2	90 + 2.0	0.13	3.4	0.70	1.05	320	22	650	45	28.7	13.0
DRS102	4	102 + 2.5	0.14	3.6	0.91	1.35	305	21	610	42	32.9	14.9
DRS114	4 1/2	114 + 2.5	0.14	3.6	1.01	1.50	260	18	520	36	37.5	17.9
DRS127	5	127 + 2.5	0.14	3.6	1.11	1.65	230	16	460	32	43.9	19.9

## Dragman Premium

Article Number	Inner Diameter		Wall Thickness		Weight		Maximum Working Pressure		Burst Pressure		Nom. Tensile Strength	
	inch	mm	inch	mm	lbs / ft	kg / m	psi	bar	psi	bar	X1000 lbs	X1000 kg
DRP102	4	102 + 2.5	0.16	4.2	1.14	1.70	260	18	535	37	37.5	17.9
DRP114	4 1/2	114 + 2.5	0.17	4.3	1.22	1.82	260	17.5	535	35	43.9	19.9
DRP127	5	127 + 2.5	0.17	4.3	1.31	1.95	215	15	435	30	48.3	21.8
DRP140	5 1/2	140 + 3.0	0.17	4.3	1.44	2.20	215	15	435	30	56.4	25.5
DRP152	6	152 + 3.0	0.17	4.4	1.54	2.30	215	15	435	30	60.4	27.3
DRP203	8	203 + 4.0	0.21	4.7	2.28	3.40	215	15	435	30	103.2	46.9

## Dragman Extra Performance

Article Number	Inner Diameter		Wall Thickness		Weight		Maximum Working Pressure		Burst Pressure		Nom. Tensile Strength	
	inch	mm	inch	mm	lbs / ft	kg / m	psi	bar	psi	bar	X1000 lbs	X1000 kg
DRXP127	5	127 + 2.5	0.19	4.8	1.48	2.20	215	15	435	30	48.3	21.8
DRXP140	5 1/2	140 + 3.0	0.19	4.9	1.65	2.45	215	15	435	30	56.4	25.5
DRXP152	6	152 + 3.0	0.20	5.0	1.85	2.75	215	15	435	30	60.4	27.3
DRXP165	6 1/2	165 + 3.0	0.20	5.1	2.30	3.40	290	20	580	40	81.2	36.8
DRXP178	7	178 + 3.0	0.21	5.3	2.35	3.50	290	20	580	40	81.2	36.8
DRXP184	7 1/4	184 + 3.0	0.21	5.3	2.38	3.55	290	20	580	40	81.2	36.8

**Note:** Minimum safety factor burst to maximum working pressure is 2:1 for non-hazardous/non-flammable liquids. For questions about chemical resistance please check [mandals.com/support](http://mandals.com/support).



# Supply Line & Irrigation

## Superman HVT

### TPU Hose

**Mandals Superman High Volume Transfer (HVT) is our market leading all-purpose hose for fluid transfer. Not only is Superman HVT designed for higher working pressures when transporting fluids, the hose is also heavily reinforced with exceptional resistance to abrasion and cutting.**

The Mandals Superman HVT series is superior in properties when compared to Ultraman HVT.



**High Diameter and Dimension Stability**



**Easy to Deploy and Store**



**Great Adhesion and Tensile Strength**



**High Abrasion and Kink Resistance**



**Minimal Snaking of Pressurized Hose**



**High Puncture Resistance**



**Long Lifetime and Low Maintenance**



**High Quality Materials**

### Primary Uses & Applications

- Heavy-duty firefighting systems and fire monitors.
- Emergency water removal during floods.
- Industrial plants.
- Refineries.
- Tank farms.
- Tank to ship vessels and vice versa.
- Long-distance water transfer.
- Mining.
- Supply hose for large agricultural systems.

### Features

- Resistant to a wide range of chemicals.
- High diameter stability and diameter recovery after pressure release.
- Excellent hydrolysis and fungus resistance.
- Superior UV, Ozone, and weathering resistance.
- Excellent abrasion and puncture resistance.

### Construction

- A high tensile polyester reinforcement jacket enveloped by a high-grade thermoplastic polyurethane (TPU) lining and cover material.
- The TPU is extruded through a circular woven reinforcement, creating a strong bond between cover and lining that prevents delamination, as well as firmly encapsulating the reinforcing polyester.

### Properties

- Length up to 200m. Longer lengths on request on certain sizes.
- Color options: Black (standard).
- Different coupling options available.
- Operating temperature from  $-50^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$  to  $+167^{\circ}\text{F}$ ) for pure water.

State of the art "through the weave" extrusion technology



Excellent adhesion between cover/lining and the weave

Full diameter recovery after pressure release

## Superman HVT

Article Number	Inner Diameter		Wall Thickness		Weight		Maximum Working Pressure <sup>1</sup>		Burst Pressure		Nom. Tensile Strength <sup>2</sup>	
	inch	mm	inch	mm	lbs / ft	kg / m	psi	bar	psi	bar	X1000 lbs	X1000 kg
<b>ULY127</b>	<b>5</b>	127.0 + 2.5	0.14	3.5	1.07	1.60	325	22.5	650	45	34.8	15.8
<b>ULY152</b>	<b>6</b>	152.0 + 3.0	0.15	3.7	1.34	2.00	325	22.5	650	45	44.0	21.0
<b>ULY178</b>	<b>7</b>	178.0 + 3.0	0.16	4.0	1.61	2.40	325	22.5	650	45	70.0	31.8
<b>ULY203</b>	<b>8</b>	203.0 + 3.0	0.17	4.2	2.15	3.20	305	21	610	42	81.5	37.0
<b>ULY254</b>	<b>10</b>	254.0 + 5.0	0.17	4.3	2.73	4.10	260	18	520	36	101.0	46.0
<b>ULY305</b>	<b>12</b>	305.0 + 5.0	0.20	5.2	3.69	5.50	300	20	600	41	154.0	70.0

**Note:** <sup>1</sup>Minimum safety factor burst to maximum working pressure is 2:1 for non-hazardous/non-flammable liquids. For questions about chemical resistance please check [mandals.com/support](http://mandals.com/support). <sup>2</sup>Calculated value. Use a reduction factor of 0.75 for realistic maximum tensile strength values.





# Supply Line & Irrigation

## Ultraman HVT

### TPU Hose

The Mandals Ultraman is designed as a lightweight transfer hose, meant for all-around use in mining, energy, and agriculture. Easy handling and a long service life make it very cost-effective. Mandals Ultraman HVT is a lightweight multipurpose hose. Its high operational pressure combined with lightweight and compact storage makes it ideal for use within several industries.

The Ultraman is complemented by Ultraman HVT to form a full range up to 12". Ultraman and Ultraman HVT are lighter and more flexible than Superman HVT equivalent dimensions.



**High Diameter and Dimension Stability**



**Easy to Deploy and Store**



**Great Adhesion and Tensile Strength**



**High Abrasion and Kink Resistance**



**As Light as a NBR Hose - Best in Class**



**High Puncture Resistance**



**Long Lifetime and Low Maintenance**



**High Quality TPU**

### Primary Uses & Applications

- Firefighting.
- Refineries.
- Civil defense.
- Emergency water transfer.
- Feeder and supply hose within agriculture.

### Features

- Resistant to a wide range of chemicals.
- Full diameter recovery after pressure release.
- Excellent hydrolysis and fungus resistance.
- Superior UV, Ozone, and weathering resistance.
- Field proven hose with a long track record.

### Construction

- A high tensile polyester reinforcement jacket enveloped by a high-grade thermoplastic polyurethane (TPU) lining and cover material.
- The TPU is extruded through a circular woven reinforcement, creating a strong bond between cover and lining that prevents delamination, as well as firmly encapsulating the reinforcing polyester.

### Properties

- Length up to 200m.
- Color options: Black (standard).
- Different coupling options available.
- Operating temperature from  $-50^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$  to  $+167^{\circ}\text{F}$ ) for pure water.

State of the art "through the weave" extrusion technology



Excellent adhesion between cover/lining and the weave

Full diameter recovery after pressure release

## Ultraman HVT

Article Number	Inner Diameter		Wall Thickness		Weight		Maximum Working Pressure <sup>1</sup>		Burst Pressure		Nom. Tensile Strength <sup>2</sup>	
	inch	mm	inch	mm	lbs / ft	kg / m	psi	bar	psi	bar	X1000 lbs	X1000 kg
ULH203	8	203 + 3.0	0.16	3.9	1.82	2.7	305	21	610	42	815	37.0
ULH254	10	254 + 5.0	0.16	4.0	2.35	3.5	260	18	520	36	101.0	46.0
ULH305	12	305 + 5.0	0.17	4.2	2.83	4.2	215	15	435	30	120.0	54.5

Note: <sup>1</sup>Minimum safety factor burst to maximum working pressure is 2:1 for non-hazardous/non-flammable liquids. For questions about chemical resistance please check [mandals.com/support](http://mandals.com/support). <sup>2</sup>Calculated value. Use a reduction factor of 0.75 for realistic maximum tensile strength values.



# Supply Line & Irrigation

## Ultraman

### TPU Hose

**The Mandals Ultraman is designed as a lightweight transfer hose, meant for all-around use in mining, energy, and agriculture. Easy handling and a long service life make it very cost-effective.**

The Ultraman is complemented by Ultraman HVT to form a full range up to 12". Ultraman and Ultraman HVT are lighter and more flexible than Superman HVT equivalent dimensions.



**High Diameter and Dimension Stability**



**Easy to Deploy and Store**



**Great Adhesion and Tensile Strength**



**High Abrasion and Kink Resistance**



**As Light as an NBR Hose - Best In Class**



**High Puncture Resistance**



**Long Lifetime and Low Maintenance**



**High Quality TPU**

### Primary Uses & Applications

- Dewatering in industry and open pit mines.
- Bypass line for sewage.
- Bypass line for slurry.
- Feeder hose for irrigation.
- Draghose in smaller umbilical systems.

### Features

- Resistant to a wide range of chemicals.
- Full diameter recovery after pressure release.
- Excellent hydrolysis and fungus resistance.
- Superior UV, Ozone, and weathering resistance.
- Field proven hose with a long track record.

### Construction

- A high tensile polyester reinforcement jacket enveloped by a high-grade thermoplastic polyurethane (TPU) lining and cover material.
- The TPU is extruded through a circular woven reinforcement, creating a strong bond between cover and lining that prevents delamination, as well as firmly encapsulating the reinforcing polyester.

### Properties

- Length up to 200m. Longer lengths upon request for some sizes.
- Color options: Black (standard).
- Different coupling options available.
- Operating temperature from  $-50^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$  to  $+167^{\circ}\text{F}$ ) for pure water.

State of the art "through the weave" extrusion technology



Excellent adhesion between cover/lining and the weave

Full diameter recovery after pressure release

## Ultraman

Article Number	Inner Diameter		Wall Thickness		Weight		Maximum Working Pressure <sup>1</sup>		Burst Pressure		Nom. Tensile Strength <sup>2</sup>	
	inch	mm	inch	mm	lbs / ft	kg / m	psi	bar	psi	bar	X1000 lbs	X1000 kg
ULS065	2 1/2	65.0 + 2.0	0.11	2.8	0.44	0.66	400	28	810	56	14.3	6.5
ULS076	3	76.0 + 2.0	0.11	2.9	0.56	0.84	360	25	725	50	17.4	7.9
ULS090	3 1/2	90.0 + 2.0	0.12	3.0	0.66	0.98	310	21.5	620	43	20.0	9.1
ULS102	4	102.0 + 2.5	0.13	3.2	0.81	1.20	305	21	610	42	22.2	10.1
ULS114	4 1/2	114.0 + 2.5	0.13	3.2	0.93	1.39	265	18.5	535	37	23.8	10.8
ULS127	5	127.0 + 2.5	0.13	3.3	1.02	1.52	250	17.5	505	35	26.4	12.0
ULS152	6	152.0 + 3.0	0.13	3.3	1.16	1.73	218	15	435	30	32.8	14.9
ULS178	7	178.0 + 3.0	0.13	3.4	1.38	2.05	195	13.5	390	27	37.6	17.1

**Note:** <sup>1</sup>Minimum safety factor burst to maximum working pressure is 2:1 for non-hazardous/non-flammable liquids. For questions about chemical resistance please check [mandals.com/support](http://mandals.com/support). <sup>2</sup>Calculated value. Use a reduction factor of 0.75 for realistic maximum tensile strength values.



# Supply Line & Irrigation

## Flexitex

### Rubber Hose

**Mandals Flexitex is a heavily reinforced fluid transfer hose series with long track record. The versatile design and high-quality rubber have made it popular across many applications worldwide.**

The Flexitex series is comprised of Standard and Extra. Extra is thicker than Standard.



**High Diameter and Dimension Stability**



**Easy to Deploy and Store**



**Great Adhesion and Tensile Strength**



**High Abrasion and Kink Resistance**



**Excellent UV and Weather Resistance**



**High Puncture Resistance**



**Long Lifetime and Low Maintenance**



**High Quality Materials**

## Primary Uses & Applications

- Feeder hose for any type of water transfer application.
- General water transfer hose for non-flammable liquids in construction, mining and industry.
- Supply hose for irrigation.
- Feeder hose for slurry systems.
- Drill water supply.
- Used as a flexible pipeline for industrial firefighting teams.

## Features

- Highly durable.
- Light weight and easy to deploy and retrieve.
- Adapts well to the terrain and can be routed around obstacles.
- Minimum axial elongation and snaking.
- Field proven hose with a long track record.

## Construction

- A high tensile polyester reinforcement jacket enveloped by a high-grade thermoplastic polyurethane (TPU) lining and cover material.
- The TPU is extruded through a circular woven reinforcement, creating a strong bond between cover and lining that prevents delamination, as well as firmly encapsulating the reinforcing polyester.

## Properties

- Lengths up to 200 meters.
- Color options: Black (standard).
- Different coupling options available.
- Operating temperature from  $-30^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$  to  $+167^{\circ}\text{F}$ ). Intermittent use up to  $+80^{\circ}\text{C}$  ( $+176^{\circ}\text{F}$ ). Versions available for tropical or warm climates upon request.

The rubber blend is extruded through a circular woven reinforcement made from filament polyester yarn



Made from a blend of nitrile rubber and PVC, with added UV barrier to prevent damage from UV radiation

Excellent bonding between cover and lining as well as firmly encapsulating the reinforcing polyester

## Flexitex Standard

Article Number	Inner Diameter		Wall Thickness		Weight		Maximum Working Pressure <sup>1</sup>		Burst Pressure		Nom. Tensile Strength <sup>2</sup>	
	inch	mm	inch	mm	lbs / ft	kg / m	psi	bar	psi	bar	X1000 lbs	X1000 kg
-												
<b>AFS051</b>	<b>2</b>	51.0 + 2.0	0.09	2.2	0.29	0.43	330	23	665	46	8.4	3.8
<b>AFS065</b>	<b>2 1/2</b>	65.0 + 2.0	0.09	2.2	0.36	0.53	330	23	665	46	9.3	4.2
<b>AFS076</b>	<b>3</b>	76.0 + 2.0	0.10	2.5	0.49	0.73	330	23	665	46	11.5	5.2
<b>AFS090</b>	<b>3 1/2</b>	90.0 + 2.0	0.11	2.7	0.67	1.00	305	21	610	42	17.6	8.0
<b>AFS102</b>	<b>4</b>	102.0 + 2.5	0.11	2.7	0.74	1.10	305	21	610	42	25.1	11.4
<b>KFS127</b>	<b>5</b>	127.0 + 3.0	0.12	3.0	1.01	1.53	305	21	610	42	32.2	14.6
<b>KFS150</b>	<b>6</b>	150.0 + 3.0	0.14	3.5	1.24	1.85	265	18	535	37	35.5	16.1
<b>KFT152</b>	<b>6</b>	152.0 + 4.0	0.14	3.6	1.31	1.95	305	21	610	42	37.5	17.0

## Flexitex Extra

Article Number	Inner Diameter		Wall Thickness		Weight		Maximum Working Pressure <sup>1</sup>		Burst Pressure		Nom. Tensile Strength <sup>2</sup>	
	inch	mm	inch	mm	lbs / ft	kg / m	psi	bar	psi	bar	X1000 lbs	X1000 kg
<b>MFX076</b> (MFT076)	<b>3</b>	76.0 + 2.0	0.12	3.1	0.64	0.95	360	25	720	50	20.1	9.1
<b>MFX090</b> (MFT090)	<b>3 1/2</b>	90.0 + 2.5	0.13	3.3	0.79	1.18	320	22	640	44	22.3	10.1
<b>MFX102</b> (MFT102)	<b>4</b>	102.0 + 2.5	0.13	3.3	0.80	1.20	305	21	610	42	25.1	11.4
<b>MFX114</b> (MFT114)	<b>4 1/2</b>	114.0 + 3.0	0.13	3.4	1.04	1.55	305	21	610	42	27.6	12.5
<b>KFX127</b> (KFT127)	<b>5</b>	127.0 + 3.0	0.14	3.6	1.15	1.71	305	21	610	42	34.7	15.7
<b>KFX150</b>	<b>6</b>	150.0 + 3.0	0.15	3.8	1.41	2.10	305	21	610	42	37.5	17.0
<b>KFX152</b>	<b>6</b>	152.0 + 4.0	0.15	3.8	1.43	2.13	305	21	610	42	37.5	17.0

**Note:** <sup>1</sup>Minimum safety factor burst to maximum working pressure is 2:1 for non-hazardous/non-flammable liquids. For questions about chemical resistance please check [mandals.com/support](http://mandals.com/support). <sup>2</sup>Calculated value. Use a reduction factor of 0.75 for realistic maximum tensile strength values.

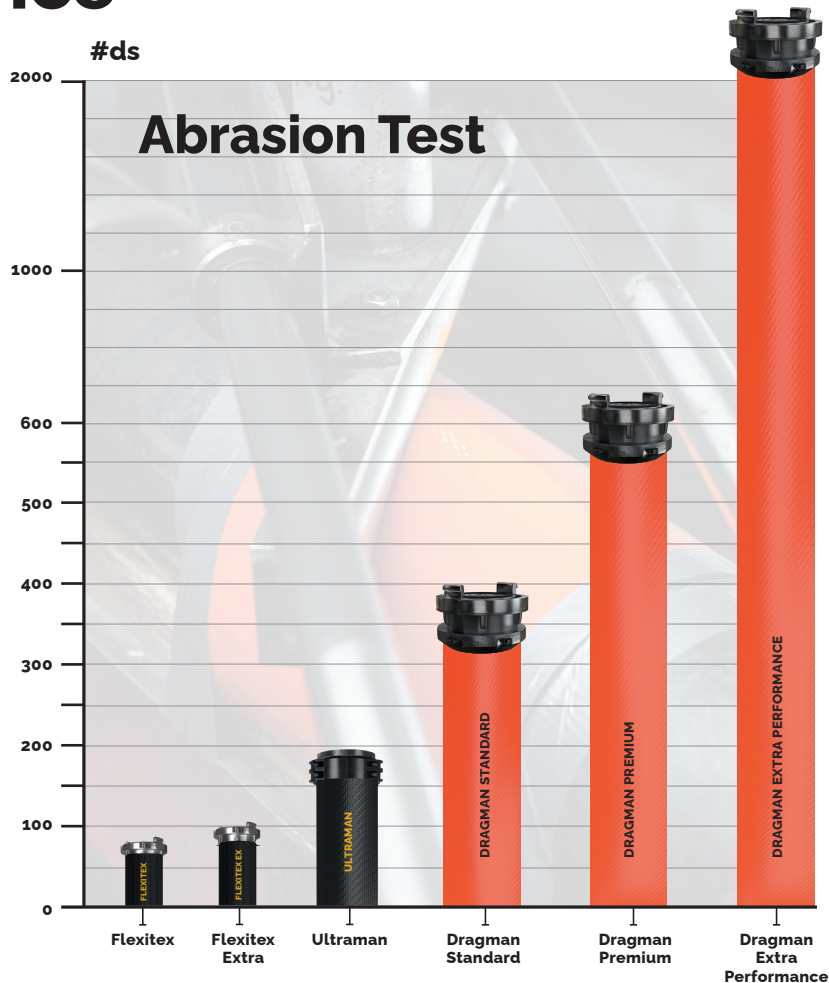
# Abrasion Resistance

Abrasion resistance is a measurement that indicates how well a hose can handle wear and tear. The TPU or rubber quality, along with the thickness of the layer will be the main factors that determine a hose score on this metric.

Abrasion tests are performed with a piece of sand-paper mounted on a mechanical arm. The mechanical arm is dragged back and forth over the hose until the weave is exposed. A counter registers the amount of double strokes (#ds) each hose can handle.

Mandals performs measurements at the thinnest area of the hose and have also added an extra load to the test arm compared to BS 6391 test requirements.

Mandals does regular benchmark testing to compare Mandals' products to the rest of the market, and our hoses consistently delivery high scores on this metric. This is due to the high quality materials we use in our products.



# Tensile Strength

## Flexitex Standard

inch	X1000 lbs	Tons
4"	19.4	8.8



## Dragman Standard

inch	X1000 lbs	Tons
5"	43.9	19.9



## Flexitex Extra

inch	X1000 lbs	Tons
4"	25.1	11.4



## Dragman Premium

inch	X1000 lbs	Tons
5"	37.8	17.1



## Ultraman

inch	X1000 lbs	Tons
4"	22.2	10.1



## Dragman Extra Performance

inch	X1000 lbs	Tons
5"	48.3	21.80

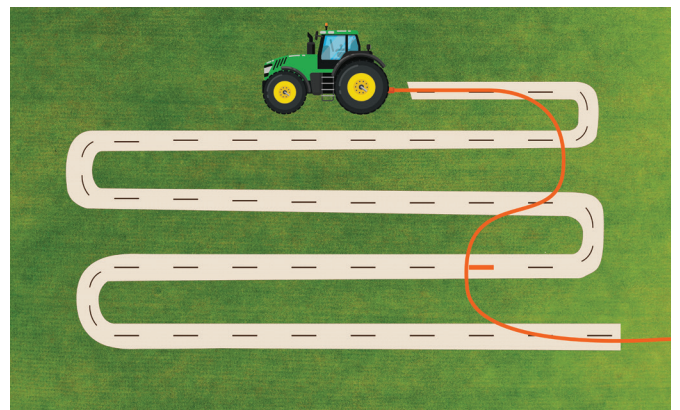


# Drag Hoses vs. Slurry Tanks



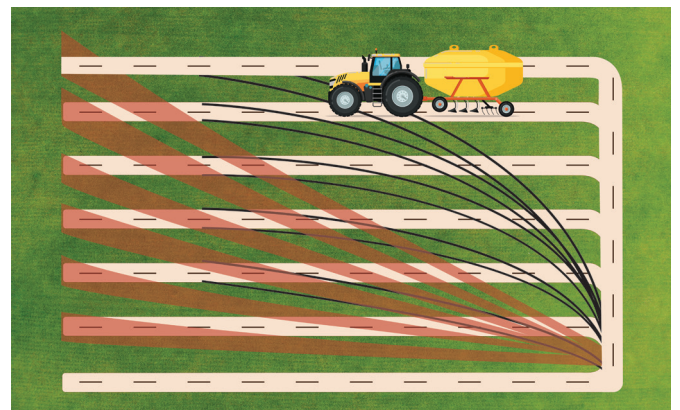
## Drag Hose System

- No soil compression.
- Lighter equipment.
- Immediate volume - no down time.
- Continuous flow - no refill.
- Flexible supply line from lagoon / pit.
- No occupancy of surroundings (public roads).
- Flexible hose dimensions available.
- Easy deployment and retrieval.
- Manure spreading also possible in soft or wet soil.



Using a drag hose system, the purpose can be accomplished with a single pass with lower weight on the field.

## Slurry Tank System



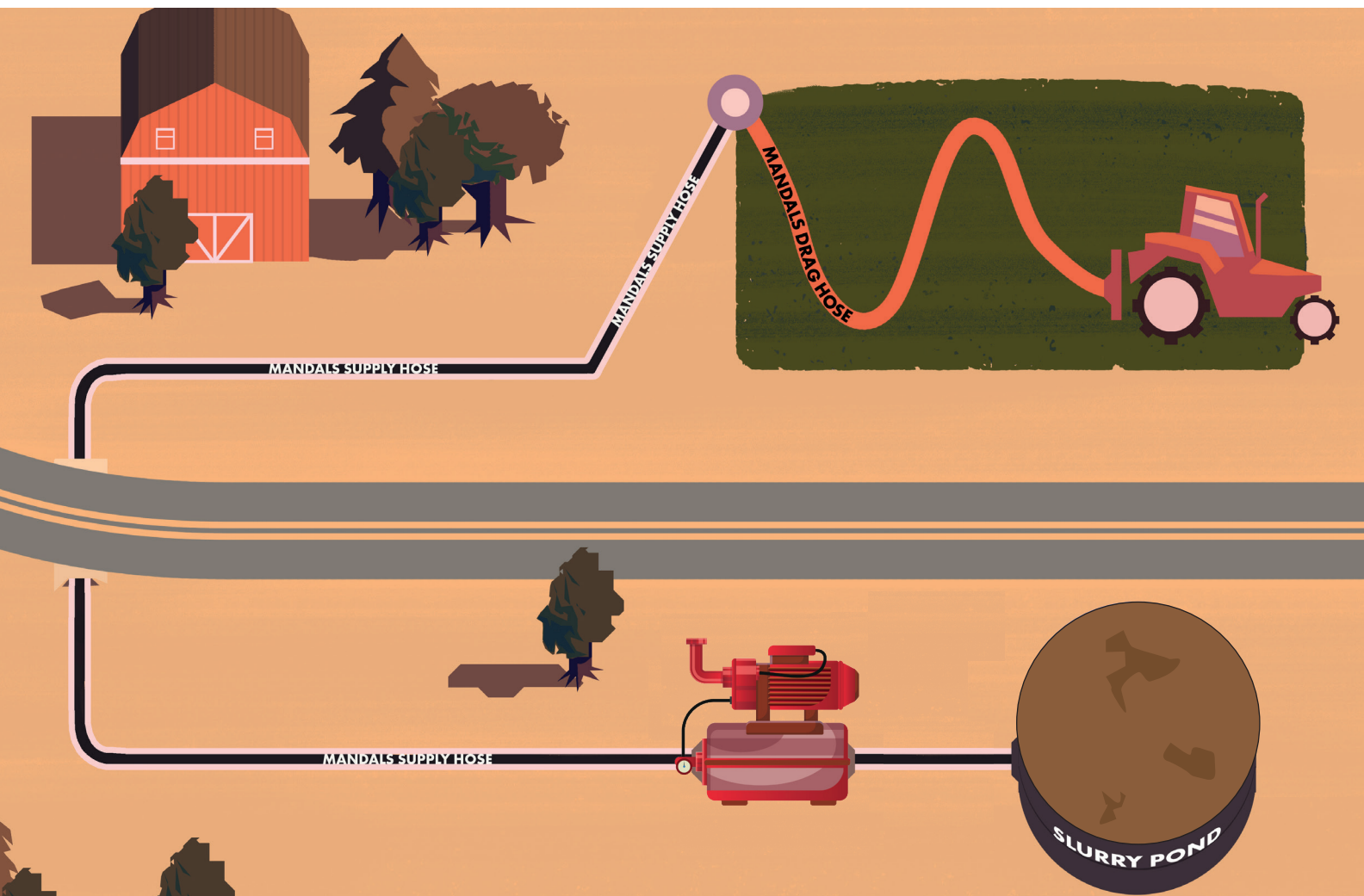
A visualization of the way a tractor with a slurry tank travels on a field. A tractor with a tank can reach a total weight of 40 tons, compressing the soil leading to lower yields. Fuel consumption and roadway driving are also important factors.

# The Power of an Umbilical Drag Hose System

Efficient slurry distribution starts with the right system – and that's why farmers turn to umbilical drag hose setups. This high-capacity system delivers a continuous flow of manure and slurry without the need for heavy tankers to drive across the field. The result? Minimal soil compression, maximized spreading efficiency, greater flexibility in application, and a significantly lower CO<sub>2</sub> footprint.

## Why Choose an Umbilical Drag Hose System?

- **Protects soil structure:** Eliminates deep ruts and reduces long-term compression.
- **Maximizes efficiency:** Continuous slurry flow means no refilling, no downtime.
- **Adaptable to terrain:** Works seamlessly on hills, wet ground, and soft fields.
- **More control, less waste:** Uniform distribution and low-emission placement improve slurry and manure uptake.
- **Lower CO<sub>2</sub> footprint and reduced smell:** Less driving, fewer emissions, and minimal disturbance to surroundings.





World Class Lay-Flat Hoses

# Agriculture

## Let us contact you

By scanning the QR code below, you will be able to fill in your information and choose the products you would like to learn more about. One of our sales managers will get in touch with you shortly to help you with your challenges and suggest appropriate solutions for your needs.



**NO (+47) 38 27 24 00**



**sales@mandals.com**



**Mandals AS  
Nordre Banegate 26  
4515 Mandal , Norway**



**www.mandals.com**