



Specification

We supply a large range of seals in a selection of sizes and materials for compatibility with many different types of cargo and service conditions. Please contact us if the material you want is not on our data sheet.

If you are ordering a manlid or inspection hatch assembly, we can install the seal if you request this at the time of your order.

We supply three seal types:

- Elastomer Seals
- Composite Seals
- Braided Packing (Non Gas-Tight)

Elastomer Seals

Seals moulded from rubber compounds are suitable for many types of cargo and service conditions. Some advantages of elastomer seals include:

- easy to clean
- good resilience qualities
- excellent sealing performance
- economical to replace regularly

Please refer to data sheet SPA062 for our standard range of elastomer seals.

Composite Seals

Composite seals have been developed for general purpose tanks where the cargo can vary, therefore a multi-purpose seal is useful. Advantages of composite seals include:

- easy to clean
- good resilience qualities
- excellent sealing performance
- do not become porous
- suitable for a range of cargoes and temperatures

Please refer to data sheet SPA063 for our standard range of composite seals.

Composite Seal Types:

Super Tanktyt

The Super Tanktyt seal has a rubber core with a PTFE envelope bonded to three sides. There are two types:

- high temperature Nitrile core/PTFE envelope
- EPDM core/PTFE envelope

The Super Tanktyt seal is the ideal choice for the chemical industry. The seal's rubber core gives it the resilience to be gas-tight up to 4 Bar, and the PTFE envelope gives it excellent resistance to hazardous cargoes.

Please refer to data sheet SPA074 for more information about Super Tanktyt manlid seals.

Fortyt

The Fortyt seal has a silicone rubber core fully encapsulated with a FEP envelope. There are two types:

- round section
- square section

Please refer to data sheet SPA074 for more information about Fortyt manlid seals.

Tuffort

The Tuffort seal has a silicone rubber core fully encapsulated with an advanced fluoroplastic envelope which gives the seal increased resilience. There are two types:

- round section
- square section

Please refer to data sheet SPA074 for more information about Tuffort manlid seals.

Braided Packing (Non Gas-Tight)

Braided packing is made from PTFE impregnated fibre that is tightly braided. There are two types:

- PTFE braided fibre with silicone core
- PTFE braided fibre (no core)

We supply PTFE braided fibre packing either as a cut length or in a roll for you to cut to the necessary size.

CAUTION: Braided packing is a rigid material that will not give a gas-tight seal. The material is lubricant-free but it does contain a small percentage of the wetting agents used during its manufacturing process. Note that small amounts of these wetting agents can leach during use.

For high temperature service conditions, we also supply a Graphite impregnated fibre seal.

Please refer to data sheet SPA064 for our standard range of braided seals.

Precautions

Seal Gas-Tightness

The seal material, the number of manlid bolt fasteners and neckring distortion can affect seal gas-tightness.

For more information, please refer to the linked document below, or contact us.

[View Handnut Torque Guide - Hinged Manlid Assemblies](#)

CAUTION: When the neckring has been welded into the vessel, the neckring must be flat to a maximum tolerance of 2mm and round to a maximum tolerance of 4mm. If the neckring is distorted during welding, the manlid assembly will not seal correctly and it can malfunction during operation. Fort Vale accepts no responsibility for distortion caused by welding.

Compatibility

CAUTION: Make sure that the seal material is compatible with the cargo and the service conditions. This includes, but is not limited to:

- dimensions
- maximum allowable working pressure
- test pressure
- vacuum conditions
- minimum/maximum design temperatures
- materials of construction.

Elastomer Seals

The table shows our standard range. Our elastomer seals are colour-coded to identify the material. The applicable colour is marked on the outer edge of the seal.

If the material you need is not shown, please contact Fort Vale. For our standard range of composite seals and braided packing, please refer to data sheet SPA063 and SPA064.

Material	Compatibility (Example Only) & Minimum/Maximum Temperature	Pendle Manlid Seal				Euro Lid Seal			Colour Code
		Part Number & Section Dimension (mm)	Part Number & Section Dimension (mm)	Part Number & Section Dimension (mm)	Part Number & Section Dimension (mm)	Part Number & Section Dimension (mm)	Part Number & Section Dimension (mm)	Part Number & Section Dimension (mm)	
Butyl	Non-corrosive cargo -40°C to 120°C (-40°F to 248°F)	170mm (7")	5005-17B	5005-30B	11536B	460mm (18")	5005-50B	600mm (24")	5005-53B
		16 x 10	16 x 10	16 x 10	14.5 x 11.8	15.24 x 11.8	16 x 10	16 x 10	16 x 16
EPDM	Some corrosive cargoes. Do not use with petroleum-cased cargo -50°C to 150°C (-58°F to 302°F)	5005-17EPD	5005-30EPD	5005-50EPD	11536EPD	5005-60EPD	5005-53EPD	5005-53EPD	Red/Blue
		16 x 10	16 x 10	16 x 10	14.5 x 11.8	15.24 x 11.8	16 x 10	16 x 10	16 x 16
CSM	Moderately corrosive cargo. Do not use with petroleum-cased cargo -40°C to 85°C (-40°F to 185°F)	5005-17CSM	5005-30CSM	5005-50CSM	11536CSM	5005-60CSM	5005-53CSM	5005-53CSM	White
		16 x 10	16 x 10	16 x 10	14.5 x 11.8	15.24 x 11.8	16 x 10	16 x 10	16 x 16
Natural White Rubber	Food products -50°C to 80°C (-58°F to 176°F)	5005-17SWR	5005-30SWR	5005-50SWR	11536SWR	5005-60SWR	5005-53SWR	5005-53SWR	
		16 x 10	16 x 10	16 x 10	14.5 x 11.8	15.24 x 11.8	16 x 10	16 x 10	16 x 16
Neoprene	Non-corrosive cargo -30°C to 100°C (-22°F to 212°F)	5005-17NR	5005-30NR	5005-50NR	11536NR	5005-60NR	5005-53NR	5005-53NR	Green
		16 x 10	16 x 10	16 x 10	14.5 x 11.8	15.24 x 11.8	16 x 10	16 x 10	16 x 16
Nitrile (Black)	Aliphatic hydrocarbons -25°C to 100°C (-13°F to 212°F)	5005-17N	5005-30N	5005-50N	11536N	5005-60N	5005-53N	5005-53N	Red
		16 x 10	16 x 10	16 x 10	14.5 x 11.8	15.24 x 11.8	16 x 10	16 x 10	16 x 16
Orange Silicone	High temperature non-corrosive cargo -50°C to 200°C (-58°F to 392°F)	5005-17S	5005-30S	5005-50S	11536S	5005-60S	5005-53S	5005-53S	
		16 x 10	16 x 10	16 x 10	14.5 x 11.8	15.24 x 11.8	16 x 10	16 x 10	16 x 16
White Silicone	Food products. FDA approved -50°C to 200°C (-58°F to 392°F)	5005-17WS	5005-30WS	5005-50WS	11536WS	5005-60WS	5005-53WS	5005-53WS	Red
		16 x 10	16 x 10	16 x 10	14.5 x 11.8	15.24 x 11.8	16 x 10	16 x 10	16 x 16
Viton A	Moderately corrosive cargo -15°C to 200°C (5°F to 392°F)	5005-17VR	5005-30VR	5005-50VR	11536VR	5005-60VR	5005-53VR	5005-53VR	Yellow
		16 x 10	16 x 10	16 x 10	14.5 x 11.8	15.24 x 11.8	16 x 10	16 x 10	16 x 16

Compatibility

CAUTION: The compatibility information in the table is for general guidance only. Make sure that the seal material is compatible with the cargo and the service conditions. This includes, but is not limited to:

- dimensions
- maximum allowable working pressure
- test pressure
- vacuum conditions
- minimum/maximum design temperatures
- materials of construction.

Composite Seals

The table shows our standard range. For more information about composite seals, please refer to data sheet SPA074.

If the material you need is not shown, please contact Fort Vale. For our standard range of elastomer seals and braided packing, please refer to data sheet SPA062 and SPA064.

Material	Compatibility (Example Only) & Minimum/Maximum Temperature	Pendle Manlid Seal Part Number & Section Dimension (mm)					Euro Lid Seal	
		170mm (7")	300mm (12")	460mm (18")	500mm (20")	600mm (24")	500mm (20")	500mm (20")
Fortyt Round section Silicone/FEP	Corrosive cargo - resistance similar to PTFE -60°C to 205°C (-76°F to 401°F)	5005-30FT	Ø15		5005-50FT			
Fortyt Square section Silicone/FEP	Corrosive cargo - resistance similar to PTFE -60°C to 205°C (-76°F to 401°F)	5005-30FTSQ	14 x 12		5005-50FTSQ			
Fortyt Square section White silicone/FEP	Corrosive cargo - resistance similar to PTFE -40°C to 205°C (-40°F to 401°F)				5005-50FTSQWS			
Super Tanktyt Nitrile core	Corrosive cargo - resistance similar to PTFE -25°C to 140°C (-13°F to 284°F)	5005-890	15 x 10	5005-870	5005-860	5005-850	5005-871	16 x 16
Super Tanktyt EPDM core	Corrosive cargo - resistance similar to PTFE -50°C to 150°C (-58°F to 302°F)	5005-830EP	15.5 x 10	5005-870EP	5005-860EP	5005-850EP		
Tuffort D Section Silicone/FEP	Corrosive cargo - resistance similar to PTFE -60°C to 160°C (-76°F to 320°F)		5005-30TUF	14.5 x 10	14.5 x 12	15 x 10		
PFA White silicone/ PFA	Corrosive cargo - resistance similar to PTFE -40°C to 260°C (-40°F to 500°F)		15.1 x 12.5	5005-30PFA	5005-50TUF	15.1 x 12.5	5005-50PFA	

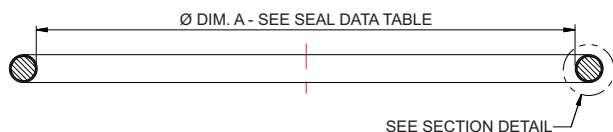
Compatibility

CAUTION: The compatibility information in the table is for general guidance only. Make sure that the seal material is compatible with the cargo and the service conditions. This includes, but is not limited to:

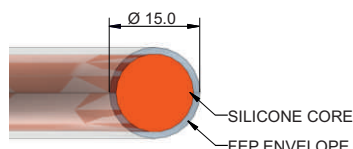
- dimensions
- maximum allowable working pressure
- test pressure
- vacuum conditions
- minimum/maximum design temperatures
- materials of construction.

Fortyt: Round Section

Section View



Section Detail



Specification & Design Conditions

Material composition

Core: Silicone

Envelope: FEP - full encapsulation

Standard sizes

Ø300mm, Ø500mm

Design temperature minimum/maximum

-60°C / 205°C (Refer to CAUTION)

Maximum torque

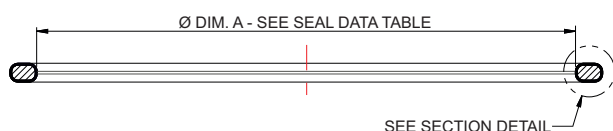
68Nm (Refer to CAUTION)

Seal Data

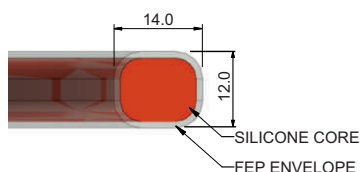
Nominal Ø (mm)	Dim. A (mm)	Part No.
300	290.0	5005-30FT
500	485.0	5005-50FT

Fortyt: Square Section

Section View



Section Detail



Specification & Design Conditions

Material composition

Core: Silicone

Envelope: FEP - full encapsulation

Standard sizes

Ø300mm, Ø500mm

Design temperature minimum/maximum

-60°C / 205°C (Refer to CAUTION)

Maximum torque

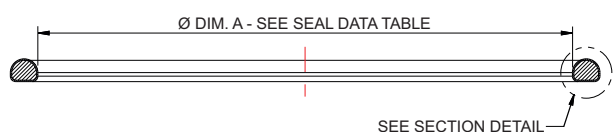
Ø300: 54Nm (Refer to CAUTION)

Ø500: 68Nm (Refer to CAUTION)

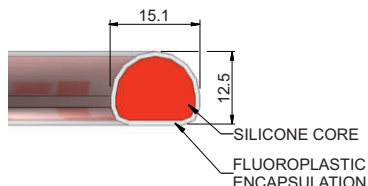
Seal Data

Nominal Ø (mm)	Dim. A (mm)	Part No.
300	292.0	5005-30FTSQ
500	484.0	5005-50FTSQ

Tuffort: D Section



Section Detail



NOTE: Install the Tuffort seal with the curved face down into the seal groove and the flat face up.

Specification & Design Conditions

Material composition

Core: Special silicone

Envelope: Advanced fluoroplastic - full encapsulation

Standard sizes

Ø300mm, Ø500mm

Design temperature minimum/maximum

-60°C / 160°C

Maximum torque

80Nm (Refer to CAUTION)

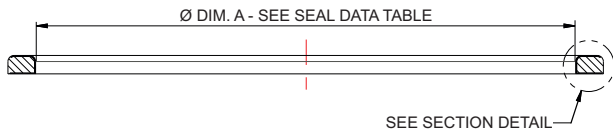
Seal Data

Nominal Ø (mm)	Dim. A (mm)	Part No.
300	293.0	5005-30TUF
500	485.0	5005-50TUF

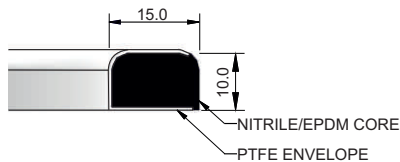
CAUTION: Obey the minimum/maximum design temperature and maximum torque limits. If you do not obey these values, it can cause permanent damage to the seal.

Super Tanktyt

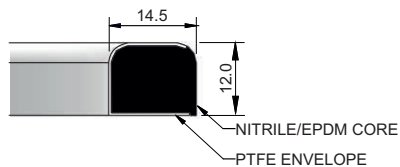
Section View



Section Detail: Ø300



Section Detail: Ø500



NOTE: Install the Super Tanktyt seal with the curved face down into the seal groove and the flat face up.

Specification & Design Conditions

Super Tanktyt is a Fort Vale trade name.
We supply 2 types of core material:

Material composition

Core: High-temperature Nitrile or EPDM
Envelope: PTFE (encapsulated 3 sides)

Standard sizes

Ø300mm, Ø500mm

Design temperature minimum/maximum

High-temp Nitrile: -25°C / 140°C (Refer to CAUTION)
EPDM: -50°C / 150°C (Refer to CAUTION)

Maximum torque

68Nm (Refer to CAUTION)

Seal identification

High-temp Nitrile: The core is marked with the part no.
EPDM: The core is marked with the part no. and a blue/red colour code

Seal Data

Nominal Ø (mm)	Dim. A (mm)	Part No. Nitrile core	Part No. EPDM core
300	293.6	5005-890	5005-890EP
500	483.9	5005-860	5005-860EP

CAUTION: Obey the minimum/maximum design temperature and maximum torque limits. If you do not obey these values, it can cause permanent damage to the seal.

Seal Gas-Tightness

The seal material, the number of manlid bolt fasteners and neckring distortion can affect seal gas-tightness.

CAUTION: When the neckring has been welded into the vessel, the neckring must be flat to a maximum tolerance of 2mm and round to a maximum tolerance of 4mm. If the neckring is distorted during welding, the manlid assembly will not seal correctly and it can malfunction during operation. Fort Vale accepts no responsibility for distortion caused by welding.

Compatibility

CAUTION: Make sure that the seal material is compatible with the cargo and the service conditions. This includes, but is not limited to:

- dimensions
- maximum allowable working pressure
- test pressure
- vacuum conditions
- minimum/maximum design temperatures
- materials of construction.

For more information about handnut torque values and handnut torque conditions, please refer to the linked document below, or contact us.

[View Handnut Torque Guide - Hinged Manlid Assemblies](#)



PTFE Impregnated Braided Fibre

PTFE braided packing is available as a cut length or as a roll of material for you to cut to the necessary size. There are two types:

- PTFE braided fibre with silicone core - see Table 1
- PTFE braided fibre (no core) - see Table 2

CAUTION: Braided packing is a rigid material that will not give a gas-tight seal. The material is lubricant-free but it does contain a small percentage of the wetting agents used during its manufacturing process. Note that small amounts of these wetting agents can leach during use.

Table 1 - With Silicone Core

Section (mm)	Length (m)	Part No.
14 x 10	1.65	5005-1410S165
15 x 10	1.65	5005-1510S165
14 x 14	1.65	5005-1414S165
14 x 14	50	5005-1414SR50
15 x 15	1.65	5005-1515S165
16 x 16	1.75	5005-1616S175
16 x 16	30	5005-1616SR30

Table 2 - No Silicone Core

Section (mm)	Length (m)	Part No.
14 x 10	1.65	5005-1410D165
15 x 10	1.65	5005-1510D165
14 x 14	1.65	5005-1414D165
14 x 14	50	5005-1414DR50
15 x 15	1.65	5005-1515D165
16 x 16	1.75	5005-1616D175
16 x 16	30	5005-1616DR30



Related Parts

Description	Part No.
Mitre seal cutter - for use with braided packing	400/3100

Graphite Impregnated Braided Fibre

CAUTION: Braided packing is a rigid material that will not give a gas-tight seal.

Material	Compatibility (Example Only) & Minimum/Maximum Temperature	Pendle Manlid Seal Part Number & Section Dimension (mm)			Euro Lid Seal
		300mm (12")	500mm (20")	600mm (24")	
Graphite Impregnated Fibre (Non-asbestos)	Non-corrosive high temperature cargo e.g. tar, bitumen -50°C to 250°C (-58°F to 482°F)	5005-30GA	5005-50GA	5005-60GA	5005-53GA
		14.2 x 14.2	14.2 x 14.2	14.2 x 14.2	16 x 16

Compatibility

CAUTION: The compatibility information in the table is for general guidance only. Make sure that the seal material is compatible with the cargo and the service conditions. This includes, but is not limited to:

- dimensions
- maximum allowable working pressure
- test pressure
- vacuum conditions
- minimum/maximum design temperatures
- materials of construction.

For our standard range of elastomer seals and composite seals, please refer to data sheet SPA062 and SPA063.