

Product certificate **K26785/13**



Issued	2023-03-01
Replaces	K26785/12
Page	1 of 6

Thermoplastics piping systems for the transport of liquid oil and related products and their vapours

STATEMENT BY KIWA

With this product certificate, issued in accordance with the Kiwa Regulations for Product Certification, Kiwa declares that legitimate confidence exists that the products supplied by

Nupi Industrie Italiane S.p.A.

as specified in this product certificate and marked with the Kiwa[®]-mark in the manner as indicated in this product certificate may, on delivery, be relied upon to comply with Kiwa evaluation guideline BRL-K552/04 "Thermoplastics piping systems for the transport of liquid oil and related products and their vapours" dated 2022-12-02.

The products have been tested for compliance with the following media:

- Petrol (100% mineral based fuel)
- Kerosene (100% mineral based fuel)
- Diesel (100% mineral based fuel)
- Bio petrol containing up to 20% Ethanol (= up to E20)
- Bio petrol containing 85% Ethanol (= E85)
- Bio kerosene containing up to 20% Ethanol
- Bio diesel containing up to 20% FAME (= up to B20)
- Diesel Exhaust Fluid (AdBlue, AUS 32)
- Hydrotreated Vegetable Oils up to 100% (HVO)

The piping systems are suitable for above ground and underground installation.

Ron Scheepers Kiwa

Supplier

Publication of this certificate is allowed. Advice: consult www kiwa nl in order to ensure that this certificate is still valid.

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> Certification process consists of initial and regular assessment of: • quality system

product

page 2 of 6

Thermoplastics piping systems for the transport of liquid oil and related products and their vapours

APPLICATION AND USE

General

The piping systems complying with this evaluation guideline are suitable for the transport of liquid oil and related products and their vapours as detailed on page 1 of this certificate.

Application

The piping systems are suitable in fuel applications under positive or negative pressure with a maximum speed of the liquid of 5 m/s and with a lifetime expectancy of 20 years. The piping system intended for the transport at negative pressure can be used with a negative pressure of a minimum of 0,8 bar (0,2 bar absolute). The piping system intended for the transport at positive pressure can be used with a positive pressure of a maximum working pressure of 8,0 bar.

NOTE 1: For liquid products other than abovementioned liquids the test liquids and the requirements for the chemical resistance and resistance to permeation shall be adapted.

NOTE 2: At the moment of issue of this guideline the following pressures are common in pressure systems: working pressure: 2,5 bar rest pressure: 0,9 bar.

Leak detection

Pressure systems have to be equipped with a leak detection unit on all sections of the pipeline that are under constant pressure according to Kiwa Guideline BRL-K910. All sections of the pipe work under constant pressure must be double wall and have provisions to be installed in combination with a leak detection unit that switches off the pressure pump in case of leakage.

TECHNICAL SPECIFICATION

General

Thermoplastic pipe systems for the transport of liquid petroleum products according to the KIWA Guideline BRL-K552/04: "Thermoplastics piping systems for the transport of liquid oil and related products and their vapours".

Application

This Smartflex/ Ecosmart pipe system of Nupi Industrie Italiane S.p.A. is suitable to transport fuels as listed on page 1 of this certificate. Smartflex/ Ecosmart can only be used for alternative fuels after a technical approval by Kiwa. Furthermore, the piping system is suitable for:

- Suction systems.
- Pressure systems with a maximum working pressure of 116 psi(g) or 8 bar.
- Underground or aboveground applications.

The piping system is not allowed for LPG applications.

Smartflex pipe is made of polyethylene with a modified nylon, EVOH or Polyamide barrier layer to reduce the permeation of liquids. Secondary pipe is made of high density polyethylene. This pipe is supplied in coils or as straight pipe in sizes from ø 32, 40, 50, 63, 90, 110, 125 and 160 mm outside diameter.

Permeation

To prevent unacceptable soil contamination by permeation of the transported product through the lined pipe system of suction and pressure systems for PGS Class 1 and PGS Class 2 fuels, the space between pipe sections in underground applications, where they are connected, is to be sealed by an anti-permeation ring. Anti-permeation rings are not required for PGS Class 3 products. The use of anti-permeation rings is required in standard suction pipes (1", 1¼", 1½", and 2") when used in petrol stations. Single walled pipes in the sizes 3", 4" and 6" are not used as suction pipes for PGS Class 2 products and therefore an anti-permeation ring is not required. Also, since there is no danger of permeation from the gas phase into the environment, the use of an anti-permeation ring is not required for pressure pipes since this is always a double walled piping system.

The anti-permeation ring is a device made of impermeable material that seals off on the barrier layer, thus preventing contact between the transported product and the unprotected/exposed material of the connecting fitting. The anti-permeation ring fits inside the connecting electro-fusion welding fittings.

End-fittings, for pipe in constant contact with PGS Class 1 or PGS Class 2 product where the pipe-section ends into a metal threaded or flanged fitting are to be provided with either a lining made of the tested barrier material, a metal insert or an approved swaged metal coupling. The metal insert seals off on the metal threaded or flanged part of the fitting on one side and to the anti-permeation ring on the other side. These end-fittings are used to connect the pipe to the tank and to the dispenser or pump.

Description of the system

<u>General</u>

The Nupi Industrie Italiane S.p.A. "Smartflex/ Ecosmart" pipe system is a single wall or a double wall piping system that is used for the transport of petroleum products. Product lines are typically a single wall pipe system. Product lines are double walled in the following applications:

- Pressure applications see note,
- Installations in water catchment areas,
- On customer requirements.

The vapour recovery pipes and fill pipes are normally single wall pipe. For the connections to the tank and to the pumps, only certified fittings must be used.

Note: Dutch legislation stipulates the use of a leak detection system for pressure applications. This means that in The Netherlands, for pressure applications, only double wall piping systems equipped with a leak detection unit can be used.

page 3 of 6

Thermoplastics piping systems for the transport of liquid oil and related products and their vapours

vapou	15			
Piping systems				SRCPG-632, SAFSW-632, SGB-63, SGBEXT-63, STPC-63-A,
For suction pipes and pressure pipes, are used:				STPC-6350, SMEL63, SCEL63, SGEL63, STEL63, SAML632,
Pipes Sir	ngle wall			SAFL63112 & SAFL632
Inches	Smartflex code	I.D.	O.D.	
1"	19TSMA32	25,2	32	For 3" (90 mm) single wall pipes:
1"	19TSMAH32	26,2	32	SMEN-90, SCE-90, SGE-90, STE-90, STPCL-90, SFLAK-90,
1¼"	19TSMA40	32	40	SFLAK-90SSV, SAMNP-903, SAM-903SS, SFLAK-90(SSV),
1¼"	19TSMAH40	33	40	SFLAK-90 SAFNP-903, SRCPG-903, SAF-903SS, STPC-90-A
11⁄2"	19TSMA50	40,6	50	SMEL90, SCEL90, SGEL90, STEL90, SAML903 & SAFL903
11⁄2"	19TSMAH50	41,6	50	
2"	19TSMA63	51,6	63	For 4" (110mm) single wall pipes:
2"	19TSMAH63	52,6	63	SMEN-110, SCE-110, SGE-110, STE-110, STPCL-110 SFLAK-
3"	19TSMA90	74,6	90	110, SFLAK-110SSV, SAMNP-1104, SAM-1104SS, SAFNP-1104,
3"	19TSMAH90	75,6	90	SAF-1104SS, SMEL110, SCEL110, SGEL110, STEL110,
4"	19TSMA110	91,8	110	SAML1104 & SAFL1104
4"	19TSMAH110	92,8	110	
6"	19TSMA160	134,4	160	For 6" (160mm) single wall pipes:
6"	19TSMAH160	135,4	160	SMEN-160, SCE-160, SGE-160, STE-160, STPCL-160, SFLAK-
Pipes Do	uble wall			160 & SFLAK-160(SSV)
Inches	Smartflex code	O.D. prim.	O.D. sec.	
		pipe	pipe	For 1" (32/40mm) double wall pipes:
1"	19TSMAD32	32	40	SMEDW-32, SGEDW-32, SGBD-32, SETFC-32, SETFCV-32,
1"	19TSMAHD32	32	40	STPC-32-A, SRCPG-321, SAMNP-321, SAM-321SS, SAF-321SS,
11⁄2"	19TSMAD50	50	63	SAFNP-321, SAMONP-321, SAFONP-321, SAML321 & SAFL321
11⁄2"	19TSMAHD50	50	63	
2"	19TSMAD63	63	75	For 1 ¹ / ₂ " (50/63mm) double wall pipes:
2"	19TSMAHD63	63	75	SMEDW-50, SMEDWC-50, SCEDW-50, SGEDW-50, STEDW-50,
3"	19TSMAD90	90	125	SETF-50, SETFC-50, SETFV-50, SETFCV-50, SAPR-50, STPC-
3"	19TSMAHD90	90	125	50-A, SAWFDNP-50112, SAMONP-50112, SAMNP-50112, SAM-
4"	19TSMAD110	110	125	50112SS, SCBD-50, SGBD-50, SRCPG-50112, SAFSW-50112,
4"	19TSMAHD110	110	125	SAFNP-50112, SAF-50112SS, SAML50112, SAFL50112 &
6"	19TSMAD160225	160	225	SAFL502
6"	19TSMAHD160225	160	225	
Fittings				For 2" (63/75mm) double wall pipes:
•	2 mm) single wall pipes:			SMEDW-63, SMEDWC-63, SCEDW-63, SGEDW-63, STEDW-63,
		32 STPCI 32 S/	MND-321 SAM-	SETF-63, SETFC-63 SETFV-63, SETFCV-63, SAPR-63, STPC-
SME-32, SCE-32, SGE-32, STELV-32, STPCL-32, SAMNP-321, SAM- 321SS, SAF-321SS, SAFNP-321, SAMONP-321, SAFONP-321,			63-A, STPC-6350, SAWFDNP-632, SAMONP-632, SAMNP-632,	
SFLAK-32(SSV), SFLAK-32, SRCPG-321, STPC-32-A, SMEL32,		-	SAM-632SS, SAFNP-63112, SAMNP-63112, SAM-63112SS,	
		A, OMELOZ,	SAFNP-632, SALM-63112T70, SALM-63112T45SS, SRCPG-632,	
SGEL 32, STEL32, SAML321 & SAFL321			SAFSW-632, SGBD-63, SCBD-63, SAF-632SS, SAF-63112SS,	
For 1 1/4" (40 mm) single wall pipes:			SAML632, SAFL63112 & SAFL632	
FOLT 174 (40 mm) single wai pipes. SME 40 SCE 40 STELV 40 SAMND 40114 SAM 40114SS SAE				

SME-40, SGE-40, STELV-40, SAMNP-40114, SAM-40114SS, SAF-40114SS, SAFNP-40114, SAMONP-40114, SFLAK-40 (SSV), SFLAK-40, SAFONP-40114, SAPR-40, STPC-40-A, SMEL40, SCEL40, SGEL40, STEL40, SAML40114 & SAFL40114

For 11/2" (50 mm) single wall pipes:

SME-50, SCE-50, SGE-50, STE-50, STPCL-50, SAMONP-50112, SAMNP-50112, SAM-50112SS, SAMNP-502, SAFNP-50112, SAF-50112SS, SFLAK-50(SSV), SFLAK-50, SAPR-50, SRCPG-50112, SAFSW-50112, SGB-50, SGBEXT-50, STPC-50-A, SMEL50, SCEL50, SGEL50, STEL50, SAML50112, SAFL50112 & SAFL502

For 2" (63 mm) single wall pipes:

SME-63, SCE-63, SGE-63, STELV-63, STPCL-63, SAMONP-632, SAMNP-632, SAMNP-63112, SAM-63112SS, SAM-632SS, SAFNP-63112, SAFNP-632, SAF-632SS, SFLAK-63(SSV), SFLAK-63, SAF-63112SS, SAPR-63, SALM-63112T70, SALM-63112T45SS,

SETF-90, SETFV-90, SFLAK-90, SFLAK-90SSV, STPC-90-A,

For 3" (90/125mm) double wall pipes:

SAWFDNP-903, SAMNP-903, SAM-903SS, SAFNP-903, SAF-903SS, SRCPG-903, SAML903 & SAFL903

For 4" (110/125mm) double wall pipes:

SMEDWR-110125, SCEDW-110, SGEDW-110, STEDWR-110125, SETFC-110, SETFCV-110, SETFR-110125, SETFVR-110125, SETFVKFLA-110, SFLAK-110, SFLAK-110SSV, SAWMDNP-1104, SAWFDNP-1104, SAMNP-1104, SAM-1104SS, SAFNP-1104, SAF-1104SS, SAML1104 & SAFL1104

SMEDW-90, SMEDWC-90, SCEDW-90, SGEDW-90, STEDW-90,

For 6" (160/225mm) double wall pipes:

SMEDWR-160225, SCEDWR-160225, SGEDWR-160225, SETFR-160225, SETFVR-160225 & SFLAK-160

page 4 of 6

Thermoplastics piping systems for the transport of liquid oil and related products and their vapours

For the fill pipe are used:							
Pipes Single wall							
Smartflex code	I.D.	O.D.					
19TSMA90	74,6	90					
19TSMAU90	75,8	90					
19TSMAH90	75,6	90					
19TSMA110	91,8	110					
19TSMAU110	93	110					
19TSMAH110	92,8	110					
19TSMA160	134,4	160					
19TSMAU160	135,6	160					
19TSMAH160	135,4	160					
Pipes Double wall							
Smartflex code	O.D. prim. pipe	O.D. sec. pipe					
19TSMAD90	90	125					
19TSMAUD90	90	125					
19TSMAHD90	90	125					
19TSMAD110	110	125					
19TSMAUD110	110	125					
19TSMAHD110	110	125					
19TSMAD160	160	225					
19TSMAUD160	160	225					
19TSMAHD160	160	225					
	wall Smartflex code 19TSMA90 19TSMAU90 19TSMAH90 19TSMAH90 19TSMAH10 19TSMAU110 19TSMAU110 19TSMAU110 19TSMAU110 19TSMAU110 19TSMAU160 19TSMAU160 19TSMAU160 19TSMAU010 19TSMAU010 19TSMAUD90 19TSMAUD90 19TSMAUD90 19TSMAUD10 19TSMAUD10 19TSMAUD10 19TSMAUD10 19TSMAUD10 19TSMAUD10 19TSMAUD10 19TSMAUD10 19TSMAUD10	wall Smartflex code I.D. 19TSMA90 74,6 19TSMAU90 75,8 19TSMAH90 75,6 19TSMAH10 91,8 19TSMAU110 93 19TSMAH10 92,8 19TSMAH10 92,8 19TSMAH10 135,6 19TSMAU160 135,6 19TSMAH160 135,4 e wall U Smartflex code O.D. prim. pipe 19TSMAD90 90 19TSMAUD90 90 19TSMAUD10 110 19TSMAUD110 110 19TSMAUD110 110 19TSMAUD110 110 19TSMAUD160 160					

Fittings

For 3" (90mm) single wall pipes:

SMEN-90, SCE-90, SGE-90, STE-90, STPCL-90, SFLAK-90, SFLAK-90SSV, SAMNP-903, SAM-903SS, SAFNP-903, SRCPG-903, SAF-903SS, STPC-90-U, SMEL90, SCEL90, SGEL90, STEL90, SAML903 & SAFL903

For 4" (110mm) single wall pipes:

SMEN-110, SCE-110, SGE-110, STE-110, STPCL-110, SFLAK-110, SFLAK-110, SFLAK-110SSV, SAMNP-1104, SAM-1104SS, SAFNP-1104, SAF-1104SS, STPC-110-U, SMEL110, SCEL110, SGEL110, STEL110, SAML1104 & SAFL1104

For 6" (160mm) single wall pipes:

SMEN-160, SCE-160, SGE-160, STE-160, SFLAK-160(SSV), SFLAK-160 & STPCL-160

For 3" (90/125mm) double wall pipes:

SMEDW-90, SMEDWC-90, SCEDW-90, SGEDW-90, STEDW-90, SETF-90, SETFV-90, SFLAK-90, SFLAK-90SSV, STPC-90-U, SAWFDNP-903, SAMNP-903, SAM-903SS, SRCPG-903, SAFNP-903 & SAF-903SS

For 4" (110/125mm) double wall pipes:

SMEDWR-110125, SCEDW-110, SGEDW-110, STEDWR-110125, SETFC-110, SETFCV-110, SETFR-110125, SETFVR-110125, SETFVKFLA-110, SFLAK-110, SFLAK-110SSV, SAWMDNP-1104, SAWFDNP-1104, SAMNP-1104, SAM-104SS, SAFNP-1104, SAF-1104SS & STPC-110-U

For 6" (160/225mm) double wall pipes:

SMEDWR-160225, SCEDW-160225, SGEDWR-160225, SETFR-160225, SETFVR-160225 & SFLAK-160

For vapo	ur recovery are used:						
Pipes Sir	Pipes Single wall						
Inches	Smartflex code	I.D.	O.D.				
1"	19TSMAU32	26,4	32				
1"	19TSMAH32	26,2	32				
1¼"	19TSMA40	32,0	40				
1¼"	19TSMAU40	33,2	40				
1¼"	19TSMAH40	33,0	40				
11⁄2"	19TSMA50	40,6	50				
11⁄2"	19TSMAU50	41,8	50				
11⁄2"	19TSMAH50	41,6	50				
2"	19TSMA63	51,6	63				
2"	19TSMAU63	52,8	63				
2"	19TSMAH63	52,6	63				
3"	19TSMA90	74,6	90				
3"	19TSMAU90	75,8	90				
3"	19TSMAH90	75,6	90				
Pipes Double wall							
Inches	Smartflex code	I.D.	O.D.				
11⁄2"	19TSMAUD50	50	63				
11⁄2"	19TSMAHD50	50	63				
2"	19TSMAD63	63	75				
2"	19TSMAUD63	63	75				
2"	19TSMAHD63	63	75				
3"	19TSMAD90	90	125				
3"	19TSMAUD90	90	125				
3"	19TSMAHD90	90	125				

Fittings

For 1" (32mm) single wall pipes:

SME-32, SCE-32, SGE-32, STELV-32, STPCL-32, SAMNP-321, SAFNP-321, SAMONP-321, SAFONP-321, SRCPG-321, SFLAK-32(SSV), SFLAK-32, STPC-32-U, SAML321 & SAFL321

For 1 1/4" (40 mm) single wall pipes:

SME-40, SGE-40, STELV-40, SAMNP-40114, SAM-40114SS, SAF-40114SS, SAFNP-40114, SAMONP-40114, SAFONP-40114, SFLAK-40(SSV), SFLAK-40, SAPR-40, STPC-40-U, SMEL40, SCEL40, SGEL40, STEL40, SAML40114 & SAFL40114

For 11/2" (50mm) single wall pipes:

SME-50, SCE-50, SGE-50, STE-50, STPCL-50, SAMONP-50112, SAMNP-50112, SAMNP-502, SAM-50112SS, SAPR-50, SGBEXT-50, SRCPG-50112, SAFSW-50112, SGB-50, SFLAK-50(SSV), SFLAK-50 STPC-50-U, SR-5032, SMEL50, SCEL50, SGEL50, STEL50, SAML50112, SAFL50112 & SAFL502

For 2" (63mm) single wall pipes:

SME-63, SCE-63, SGE-63, STELV-63, STPCL-63, SAMONP-632, SAMNP-632, SAM-632SS, SAMNP-63112, SAM-63112SS, SAPR-63, SGBEXT-63, STPC-63-U, STPC-6350, SALM-63112T70, SALM-63112T45SS, SRCPG-632, SAFSW-632, SGB-63, SFLAK-63(SSV), SFLAK-50, SR-6350, SRDEL-6350, SMEL63, SCEL63, SGEL63, STEL63, SAML632, SAFL63112 & SAFL632

page 5 of 6

Thermoplastics piping systems for the transport of liquid oil and related products and their vapours

For 3" (90mm) single wall pipes:

SMEN-90, SCE-90, SGE-90, STE-90, STPCL-90, SFLAK-90, SFLAK-90SSV, SAMNP-903, SAM-903SS, STPC-90-U, SRCPG-903, SR-9063, SR-9050, SRDEL-9063 SMEL90, SCEL90, SGEL90, STEL90, SAML903 & SAFL903

For 1" (32/40mm) double wall pipes:

SMEDW-32, SGEDW-32, SGBD-32, SETFC-32, SETFCV-32, STPC-32-U, SRCPG-321, SAMNP-321, SAM-321SS, SAFNP-321, SFLAK-32(SSV), SFLAK-32, SAML321 & SAFL321

For 11/2" (50/63mm) double wall pipes:

SMEDW-50, SMEDWC-50, SCEDW-50, SGEDW-50, STEDW-50, SETF-50, SETFC-50, SETFV-50, SETFCV-50, SAPR-50, STPC-50-U, SFLAK-50(SSV), SFLAK-50, SAWFDNP-50112, SAMONP-50112, SCBD-50, SGBD-50, SRCPG-50112, SAFSW-50112, SAMNP-50112, SAM-50112SS, SAML50112, SAFL50112 & SAFL502

For 2" (63/75mm) double wall pipes:

SMEDW-63, SMEDWC-63, SCEDW-63, SGEDW-63, STEDW-63, SETF-63, SETFC-63, SETFV-63, SETFCV-63, SAPR-63, STPC-63-U, STPC-6350, SAWFDNP-632, SAMONP-632, SALM-63112T70, SALM-63112T45SS, SRCPG-632, SAFSW-632, SGBD-63, SCBD-63, SFLAK-63(SSV), SFLAK-63, SAMNP-632, SAM-632SS, SAMNP-63112, SAM-63112SS, SAML632, SAFL63112 & SAFL632

For 3" (90/125mm) double wall pipes:

SMEDW-90, SMEDWC-90, SCEDW-90, SGEDW-90, STEDW-90, SETF-90, SETFV-90, SFLAK-90, SFLAK-90SSV, STPC-90-U, SAWFDNP-903, SRCPG-903, SAMNP-903, SAM-903SS, SAML903 & SAFL903

For vents are used:						
Pipes Single wall						
Inches	Smartflex code	I.D.	O.D.			
1"	19TSMAU32	26,4	32			
1"	19TSMAH32	26,2	32			
1¼"	19TSMA40	32,0	40			
1¼"	19TSMAU40	33,2	40			
1¼"	19TSMAH40	33,0	40			
1½"	19TSMA50	40,6	50			
1½"	19TSMAU50	41,8	50			
1½"	19TSMAH50	41,6	50			
Pipes Double wall						
Inches	Smartflex code	I.D.	O.D.			
11⁄2"	19TSMAUD50	50	63			
11⁄2"	19TSMAHD50	50	63			
2"	19TSMAU63	63	75			
2"	19TSMAUD63	63	75			
2"	19TSMAHD63	63	75			

Fittings

For 1½" (50mm) single wall pipes:

SME-50, SCE-50, SGE-50, STE-50, STPCL-50, SAMONP-50112, SAMNP-502, SAMNP-50112, SAM-50112SS, SAPR-50, SGBEXT-50, SRCPG-50112, SAFSW-50112, SGB-50, SFLAK-50(SSV), SFLAK-50, STPC-50-U, SR-5032, SMEL50, SCEL50, SGEL50, STEL50, SAML50112, SAFL50112 & SAFL502

For 2" (63mm) single wall pipes:

SME-63, SCE-63, SGE-63, STELV-63, STPCL-63, SAMONP-632, SAMNP-632, SAMNP-63112, SAM-632SS, SAM-63112SS, SAPR-63, SGBEXT-63, STPC-63-U, SALM-63112T70, SALM-63112T45SS, SRCPG-632, SAFSW-632, SGB-63, SR-6350, SRDEL-6350, SMEL63, SCEL63, SGEL63, STEL63, SAML632, SAFL63112 & SAFL632

For 1½" (50/63mm) double wall pipes:

SMEDW-50, SMEDWC-50, SCEDW-50, SGEDW-50, STEDW-50, SETF-50, SETFC-50, SETFV-50, SETFCV-50, SAPR-50, STPC-50-U,

SAWFDNP-50112, SAMONP-50112, SCBD-50, SGBD-50, SRCPG-50112, SAFSW-50112, SAMNP-50112, SAM-50112SS, SAMNP-502 & SRDW-5032, SAML50112, SAFL50112 & SAFL502

For 2" (63/75mm) double wall pipes:

SMEDW-63, SMEDWC-63, SCEDW-63, SGEDW-63, STEDW-63, SETF-63, SETFC-63. SETFV-63, SETFCV-63. SAPR-63, STPC-63-U, SAWFDNP-632, SAMONP-632, SAMNP-632, SAM-632SS, SAMNP-63112, SAM-63112SS, SALM-63112T70, SALM-63112T45SS, SRCPG-632, SAFSW-632, SGBD-63, SCBD-63, SAFNP-632, SAF-632SS, SAFNP-63112, SAF-63112SS & SRDW-6350, SAML632, SAFL63112 & SAFL632

page 6 of 6

K26785/13

Thermoplastics piping systems for the transport of liquid oil and related products and their vapours

Standard pipe lengths

The single wall product pipe TSMA and TSMAH is available in coils in the sizes \emptyset 32, 40, 50, 63 and 90 mm. This pipe is also available in straight lengths of 5.8 and 11.6 m for the sizes \emptyset 32, 40, 50, 63, 90, 110 and 160 mm.

The double wall product pipe TSMAD and TSMAHD is available in coils in the sizes \emptyset 32, 50 and 63 mm. This pipe is also available in straight lengths of 5.8 and 11.6 m in sizes \emptyset 32, 40, 50, 63, 90 110 and 160 mm.

The vent, vapour recovery and fill pipe TSMAU, TSMA and TSMAH is available in coils in the sizes \emptyset 32, 40, 50, 63 and 90 mm. This pipe is available in straight lengths of 5.8 and 11.6 m for the sizes \emptyset 32, 40, 50, 63, 90, 110 and 160 mm.

The double wall vent, vapour recovery and fill pipe TSMAUD, TSMAD and TSMAHD is available in coils in the sizes ø 32, 50, 63. This pipe is also available in straight lengths of 5.8m and 11.6m (other lengths possible) in sizes ø 32, 40, 50, 63, 90, 110 and 160mm

The double walled pipe types TSMAD and TSMAUD are formed by using a secondary pipe type TSMAS, TSMAH by using TSMAHS, which can also be ordered separately. The secondary containment pipe TSMAS in only available in straight lengths of 5.8m and 11.6m (other lengths possible). The sizes are: ø 40, 63, 75, 125 and 225 mm.

MARKING

The products will be marked with the Kiwa logo. For the different products the marking will be as follows:

Pipes

Using indelible ink or paint, at least 1 imprint every 2 m. <u>Fittings</u>

With a sticker stating:

a barcode for traceability and warranty purposes

- type number
- voltage and welding time

By means of a moulded imprint stating:

- size
- product date code

RECOMMENDATIONS FOR CUSTOMERS

Check at the time of delivery whether:

- the supplier has delivered in accordance with the agreement;
- the mark and the marking method are correct;
- the products show no visible defects as a result of transport etc.

If you should reject a product on the basis of the above, please contact:

- Supplier
- and, if necessary,
- Kiwa Nederland B.V.

Consult the supplier's processing guidelines for the proper storage and transport methods.

The marking must include:

Pipes

- the Kiwa logo
- the word "Smartflex", the size and type of pipe
- product date or product code