

Product Data Sheet

## ThermaSmart<sup>®</sup>PRO

Insulating the future, from cradle to cradle

ThermaSmart<sup>®</sup>PRO, a thermoplastic elastomeric insulation material (TPE). Tested and trusted for all HVAC-R applications, ThermaSmart<sup>®</sup>PRO is fully recyclable and offers an outstanding insulating performance over the entire service lifetime with excellent fire retardant properties. The closed cells contain an integrated anti-water vapor transmission, limiting that water vapor diffuses in to the insulation material. ThermaSmart<sup>®</sup>PRO offers superior mechanical strength, yet in the rare case the skin does get damaged, the closed cell structure retains its protective properties. ThermaSmart<sup>®</sup>PRO complies to RoHS (Restriction of Hazardous Substances) and has very low VOC (Volatile Organic Compounds). EPD certified (Environmental Product Declaration) and Cradle to Cradle Certified<sup>™</sup> Bronze, ThermaSmart<sup>®</sup>PRO supports almost all green building programs worldwide.

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 **Applications**

- Refrigeration
- Cooling and chilled water
- Ventilation
- Hot water
- Heating
- Air Conditioning

 **Fire and smoke**

- Excellent flame extinguishing properties
- Low smoke development
- Low smoke toxicity
- No flaming droplets

 **Health and hygiene**

- Future-proof product design: healthy, risk-free raw materials and production process
- Full conformity with health and safety regulations: safe and non-toxic
- Prevents bacteria formation during entire service lifetime

 **Insulation**

- Excellent thermal insulation properties
- Reliable insulation performance over entire service lifetime
- Longer and more reliable performance of HVAC-R equipment

 **Water**

- Integrated water vapor barrier limits water vapor diffusion, also ensures performance after wear and tear
- No foil, cladding or covers needed to secure water resistance (for outdoor application, protection is advised)

 **Durability**

- Wear and tear resistant during installation and operation, even without cladding or casing
- Superb mechanical strength ensures long and maintenance-free service lifetime of HVAC-R equipment
- Long track record of excellent resistance in the toughest conditions (insulation of <32 °F lines in hot & humid climates near coastal areas)
- For the latest customer case studies, see <https://thermaflex.com/en/case-studies>

 **Sustainability**

- Optimally compliant to LEED, BREEAM and other green building standards
- Circular, and 100% recyclable. Allows material take-back through our Reclaim program

**Quality**

All Thermaflex production facilities are certified in accordance with the internationally accepted standard ISO 9001.

<https://thermaflex.com/en/knowledge-center/organizational-certificates>

**Environment and recycling**

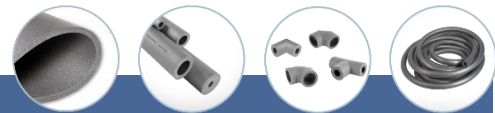
Thermaflex group of companies considers thermoplastic elastomers to be an environmentally friendly material due to its recyclability. Packaging used is FSC approved only and considered to have a low impact on the environment. Recycling of packaging and our products is supported by Thermaflex Isolatie B.V. whenever ecological and social benefits are achieved and where a social infrastructure for selective collecting and sorting of packaging and our products is fostered. Though we would not advise, but whenever 'thermal recycling' of packaging and our products (i.e. incineration with energy recovery) is carried out, thermoplastic elastomers, with its fairly simple molecular structure and low amount of additives, is considered to be a trouble-free fuel.

**Health, safety regulations**

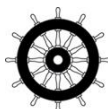
Review the Safety Data Sheet (SDS) and product labels to determine health hazards, usage instructions and precautions. Additional specific information can be requested via your local Sales Office. <https://thermaflex.com/en/knowledge-center/safety-data-sheets>

**Declaration of performance**

Actual document available on: <https://thermaflex.com/en/knowledge-center/declaration-of-performance>



Typical data – ThermaSmart <sup>®</sup> PRO tube and sheet insulation			
Properties	Units IMP/SI	Values	Testing method
<b>Physical properties</b>			
Density	lb/ft <sup>3</sup> - kg/m <sup>3</sup>	≤ 2.50 - ≤ 35	ISO 845
Structure	-	Fine, closed-cells	-
Color	-	Dark grey	-
Odor	-	No Odors	ASTM C1304
Smoke & Toxicity	-	Pass	IMO Resolution MSC 61(67)
Linear Shrinkage (10 inch specimen), % change @ -176°F (-80°C), 7 days	-	Pass	ASTM C356
Linear Shrinkage (10 inch specimen), % change @ +203°F (95°C), 7 days	-	Pass	ASTM C356
Chemical resistance	-	Excellent	ASTM D543
UV Resistance	-	Tested	ISO 4895-2 Xenon-arc
<b>Thermal properties</b>			
Insulation value (tube)	BTU·in/h ft <sup>2</sup> °F Wmk	0.245 @ 75°F 0.252 @ 90°F 0.0353 Wmk @ 24°C 0.0363 Wmk @ 32°C	ASTM C518
Insulation value (sheet)	BTU·in/h ft <sup>2</sup> °F Wmk	0.245 @ 75°F 0.252 @ 90°F 0.0353 Wmk @ 24°C 0.0363 Wmk @ 32°C	ASTM C518
Maximum service temperature	°F / °C	+203° / +95°	ASTM C411
Lowest service temperature Deformation @ -176°F (-80°C)	°F / °C m/m.K m/m.K m/m.K	-112° / -80° +0,0082 on length +0,0078 on width -0.0128 on thickness	EN 14313:2009+A1:20163, Annex B
<b>Fire properties</b>			
Fire Rating	-	25-50 PASS 1" and 2" wall thickness	UL 723 (ASTM E84)
	-	HF-1	UL 94
British Standard Part 6 British Standard Part 7	-	Class 0 Class 1	BS 476 : Part 6, 1989 + A1 2009 BS 476 : Part 7, 1997
<b>Water resistance properties</b>			
Water Absorption 100 inch <sup>2</sup> samples, % by vol. Immersion to 1" (25mm) depth for 2 hrs	-	Pass	ASTM C209
Water absorption resistance	Perm. Inch	0.03	ASTM E96



Tube: Cert. No. 0751-CPR-2-004.0-02  
Sheet: Cert. No. 1454-CPR-1019



#### Disclaimer

All recommendations and information provided on this data sheet are based on our knowledge and experience. Product specifications are intended as guidelines. Since conditions of service are beyond our control, users must satisfy themselves that products are suitable for the intended use. No guarantee or warranty is given or implied or that any use of products will not infringe rights belonging to other parties. We reserve the right to change product design and properties without notification.

Revision date: [20.01.2017]

Taking care of energy and the environment

www.thermaflex.com

Tube ranges																
ThermaSmart®Pro		Copper /CTS	Iron/PVC/IPS		Wall thickness											
					C=1/4"		E=3/8"		J=1/2"		N=3/4"		P=1"		S=1-1/4"	
Nominal insulation ID	Inner diameter (mm)	Internal diameter (Inch)	Nominal diameter (Inch)	Exterior diameter (mm)	Code	ft/box	Code	ft/box	Code	ft/box	Code	ft/box	Code	ft/box	Code	ft/box
x	7.0-8.5	x	x	x	C-6	2952	E-6	1837	x	x	x	x	x	x	x	x
1/4"	9.0-10.5	x	x	x	C-8	2821	E-8	1377	J-8	984	x	x	x	x	x	x
3/8"	11.0-12.5	1/4"	1/8"	10.3	C-10	2467	E-10	1246	J-10	918	N-10	492	x	x	x	x
1/2"	13.0-14.5	3/8"	x	x	C-12	1837	E-12	1181	J-12	853	N-12	459	P-12	308	x	x
5/8"	16.0-17.5	1/2"	1/4"	13.7	C-15-16	1443	E-15-16	1141	J-15-16	787	N-15-16	426	P-15-16	295	S-15-16	229
3/4"	19.0-20.5	5/8"	3/8"	17.1	C-18	1181	E-18	944	J-18	656	N-18	387	P-18	295	S-18	229
x	21.0-22.5	x	x	x	C-20	1115	x	x	J-20	590	N-20	354	P-20	249	S-20	X
7/8"	23.0-24.5	3/4"	1/2"	21.3	C-22	984	E-22	813	J-22	564	N-22	328	P-22	236	S-22	196
x	26.0-27.5	x	x	x	C-25-27	853	E-25-27	656	J-25-27	498	N-25-27	308	P-25-27	229	S-25-27	X
1-1/8"	29.0-30.5	1"	3/4"	26.7	C-28-30	721	E-28-30	616	J-28-30	439	N-28-30	295	P-28-30	216	S-28-30	190
x	33.0-35.0	x	x	x	C-32	x	x	x	J-32	380	N-32	223	P-32	183	S-32	150
1-3/8"	36.0-38.0	1-1/4"	1"	33.4	C-35-38	524	E-35-38	459	J-35-38	354	N-35-38	216	P-35-38	177	S-35-38	150
x	42.0-43.5	x	x	x	x	x	E-40	360	J-40	308	N-40	209	P-40	157	S-40	137
1-5/8"	44.0-46.0	1-1/2"	1-1/4"	42.2	x	x	E-42	360	J-42	295	N-42	203	P-42	150	S-42	131
1-1/2"	50.0-52.0	1-3/8"	1-1/2"	48.3	x	x	E-48	275	J-48	229	N-48	157	P-48	137	S-48	111
2-1/8"	56.0-58.0	2"	x	x	x	x	E-54	249	J-54	209	N-54	150	P-54	124	S-54	91
x	59.0-61.0	x	x	x	x	x	x	x	J-57	190	x	x	P-57	118	S-57	91
2"	62.0-64.0	x	2"	60.3	x	x	E-60	229	J-60	190	N-60	131	P-60	111	S-60	85
2-5/8"	72.0-74.0	2-1/2"	x	x	x	x	x	x	J-70	144	N-70	111	P-70	91	S-70	72
2-1/2"	77.0-79.5	x	2-1/2"	73.4	x	x	x	x	J-75-76	131	N-75-76	91	P-75-76	85	S-75-76	65
3-1/8"	82.0-84.0	3"	x	x	x	x	x	x	J-80	111	N-80	91	P-80	78	S-80	65
3"	91.5-94.5	3-1/2"	3"	88.9	x	x	x	x	J-89-90	104	N-89-90	78	P-89-90	65	S-89-90	59
4-1/8"	105.0-108.0	4"	3-1/2"	101.6	x	x	x	x	J-102	85	N-102	65	P-102	59	S-102	52
x	111.5-114.0	x	x	x	x	x	x	x	J-108-110	78	N-108-110	59	P-108-110	52	S-108-110	39
4"	117.0-120.0	4-1/2"	4"	114.3	x	x	x	x	J-114	72	N-114	59	P-114	45	S-114	32

Sheet ranges																
Width	Wall Thickness															
	1/4"			3/8"			1/2"			3/4"			1"			
	Unit	ft²	m²	Unit	ft²	m²	Unit	ft²	m²	Unit	ft²	m²	Unit	ft²	m²	
19.68"	x	x	x	x	x	x	Plates	96	9	Plates	75	7	Plates	53	5	
39.37"	Roll	1076	100	Roll	1119	104	Roll	839	78	Roll	559	52	Roll	419	39	
47.24"	x	x	x	Short Roll	x	10	Short Rolls	86	8	Short Rolls	64	6	Short Roll	43	4	

\* Variations available upon request

\*\* Moving upward, we'll do our best to meet your wishes with continuous system innovations. For the most up-to-date info, please have a look on [www.thermaflex.com](http://www.thermaflex.com)

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