

High Strength Insulation Boards & MPS

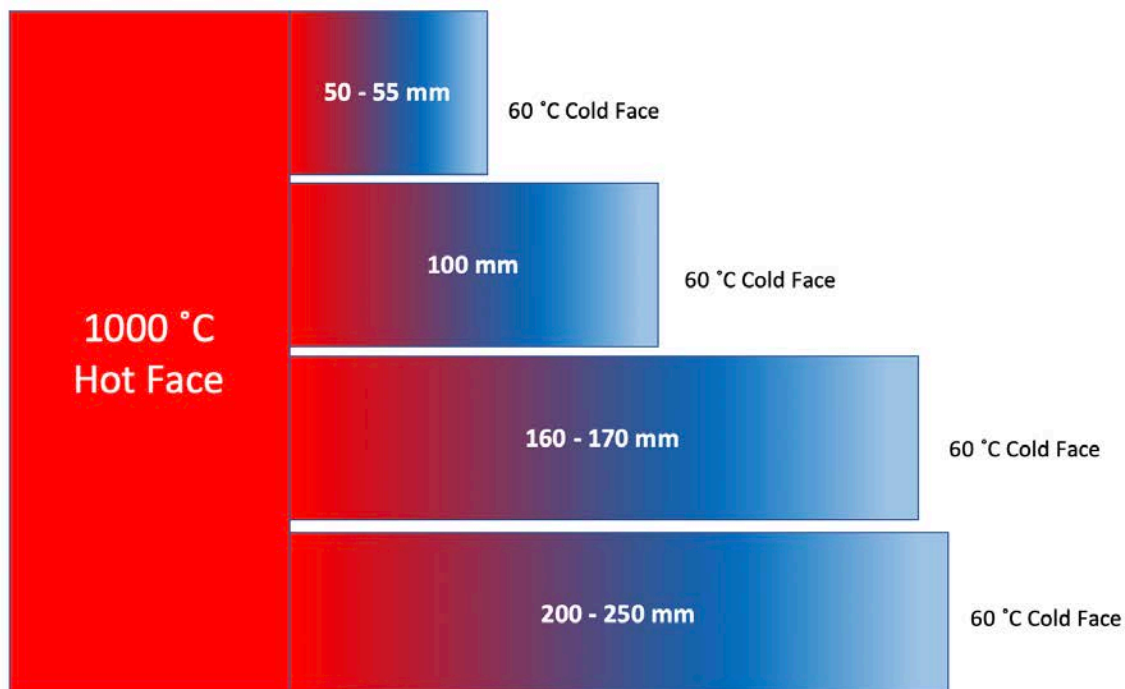
Composite Systems | Low Cost | High Performance

- √ Insulation Boards & Moulded Pipe Section
- √ Wide Application Range: 200 °C - 1600°C
- √ Lower Thicknesses: 1 - 100 mm
- √ High Strength: Upto 12 Mpa
- √ Low thermal conductivity: 0.020 - 0.13 W/m.K
- √ High temperature drop: from 1200 °C to 60 °C
- √ System design for Composite Insulation
- √ Thermal profile & calculations services
- √ Installation supervision services
- √ Ready to use sizes available



High Strength Insulation: Most Common Applications

Insulation	Hot Face Temperature °C	Insulation Thickness, mm	Cold Face Temperature °C
HSCI 200	200	15	60
HSCI 300	300	25	61
HSCI 400	400	30	62
HSCI 500	500	35	62
HSI 800	600	10	270
HSCI 600	600	60	66
HSI 800	700	10	307
HSCI 700	700	70	67
HSI 800	800	15	289
HSCI 800	800	85	68
HSI 1000	900	20	290
HSCI 900	900	65	85
HSI 1000	1000	25	284
HSCI 1000	1000	65	93
HSI 1100	1100	30	290
HSCI 1100	1100	60	139
HSI 1200	1200	30	348
HSCI 1200	1200	30	262
HSCI 1300	1300	165	128
HSCI 1400	1400	235	123
HSCI 1500	1500	285	123
HSCI 1600	1600	285	126
HSCI 1750	1650	470	350



HSI 1200 | Technical Datasheet

Wedge HSI 1200 are Calcium Silicate based Refractory Insulation Boards made of high quality refractory mineral fibers and calcium silicate bonded with high temperature clays. These insulation boards possess unique combination of properties for various industrial applications in furnace backup insulation, high temperature gasketing & seals.

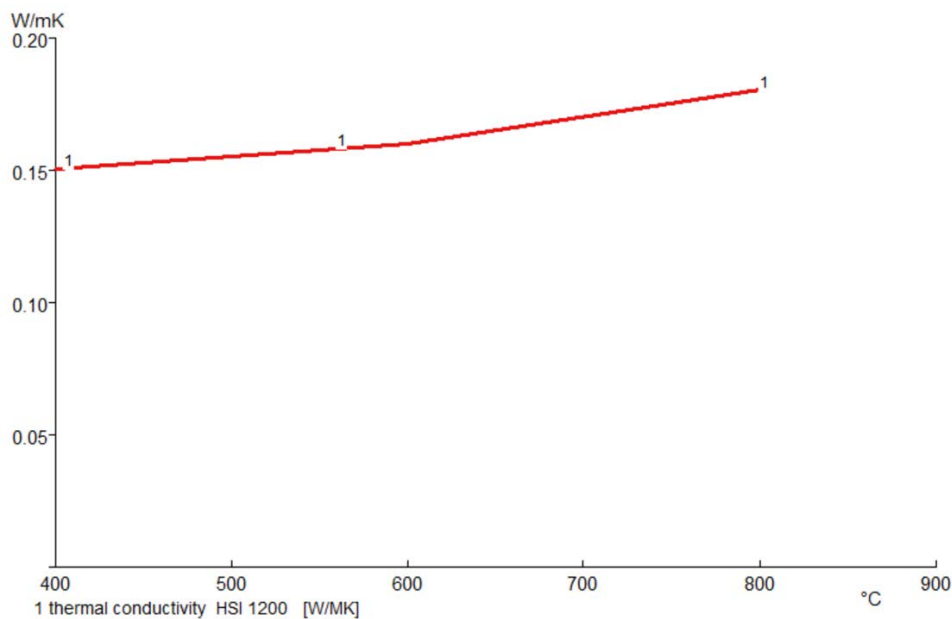
Applications

- Ladle & Tundish Insulation
- Lime Kiln and Cement Kiln Insulation
- High temperature insulation Gaskets
- Boiler & Furnace Insulation
- Oil & Gas Burners Insulation
- Furnace, Dryer, and Oven Insulation
- High temperature Pipe Insulation
- Refractory insulation expansion joints
- Metal clad Gaskets fillers
- Gaskets for centrifugal casting
- Glass rollers as washers on mandrel
- Stainless Steel Plant Rollers Insulation
- Electrical & home appliances insulation gaskets
- Fire Resistant Doors, Lifts, Safes, Cupboards

Features & Benefits

- Very Strong Boards with high compressive strength
- High temperature resistance upto 1200°C
- Low Thermal Conductivity at high temperatures
- High Electrical Resistance at high temperature
- High fire resistance and heat shield properties
- Easy to cut and punch
- Available in moulded pipe section for pipe insulation

Properties	HSI 1200	
Base Materials	Calcium Silicate & Refractory Fibre	
Classification Temperature, °C	1200	
Density, Kg/M3	1000	
Thermal conductivity, W/m.K		
	400 °C	0.15
	600 °C	0.17
	800 °C	0.18
Tensile Strength, Mpa	5	
Flexural Strength, Mpa	6	
Shrinkage % @ 1000 °C	< 1	
Compressive Strength, Mpa	8 - 10	
Loss on Ignition %	7	



HSI 1100 | Technical Datasheet

Wedge HSI 1100 are calcium silicate & wollastonite fibres based boards ideal protection against electrical arcs, used for burner, boiler and dryer gaskets. These boards are made of high quality wollastonite fibres and calcium silicate bonded with high temperature clays. These insulation boards possess unique combination of properties for various industrial applications in furnace backup insulation, high temperature gasketing & seals.

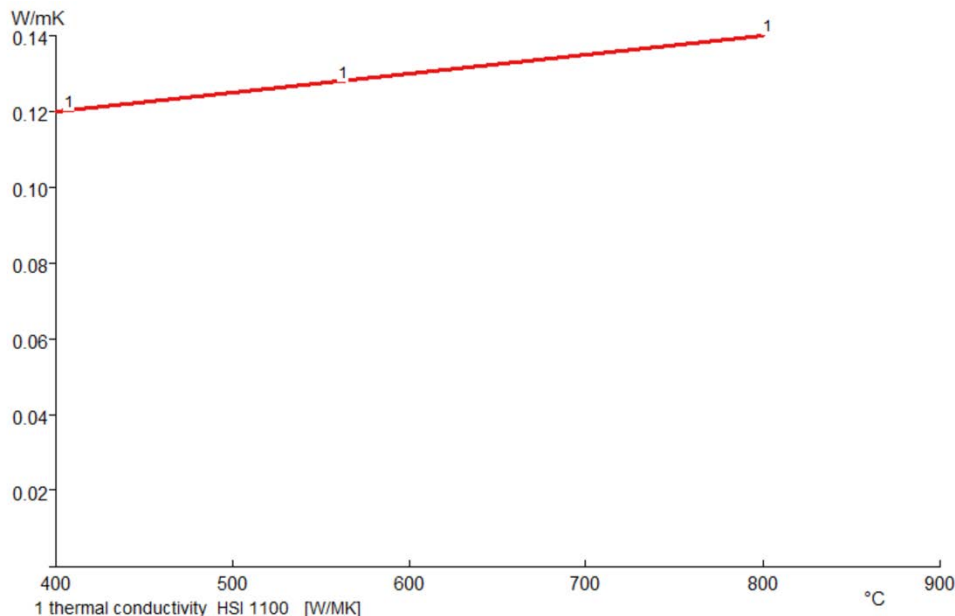
Applications

- Ladle & Tundish Insulation
- Lime Kiln and Cement Kiln Insulation
- High temperature gasket & sealings
- Boiler & Furnace Insulation
- Oil & Gas Burners Insulation
- Furnace, Dryer, and Oven Insulation
- High temperature Pipe Insulation
- Metal clad Gaskets fillers
- Gaskets for centrifugal casting
- Glass rollers as washers on mandrel
- Stainless Steel Plant Rollers Insulation
- Electrical & home appliances insulation gaskets
- Fire Resistant Doors, Lifts, Safes, Cupboards

Features & Benefits

- Very Strong Boards with high compressive strength
- High temperature resistance upto 1100°C
- Low Thermal Conductivity at high temperatures
- High Electrical Resistance at high temperature
- High fire resistance and heat shield properties
- Easy to cut and punch
- Available in moulded pipe section for pipe insulation

Properties	HSI 1100
Base Materials	Wollastonite fibres & Calcium Silicate
Classification Temperature, °C	1100
Density, Kg/M3	1000
Thermal conductivity, W/m.K	
	400 °C
	600 °C
	800 °C
Tensile Strength, Mpa	5
Flexural Strength, Mpa	6
Shrinkage % @ 1000 °C	< 1
Compressive Strength, Mpa	8 - 10
Loss on Ignition %	8



HSI 1000 | Technical Datasheet

Wedge HSI 1000 are calcium silicate & wollastonite fibres based boards ideal for high temperature backup insulation, fire protection, fire doors, electrical home appliances, electrical arcs, furnace backup insulation, high temperature gasketing, duct fire protection, pipe insulation, fire & insulation seals, high temperature electrical insulation, etc.

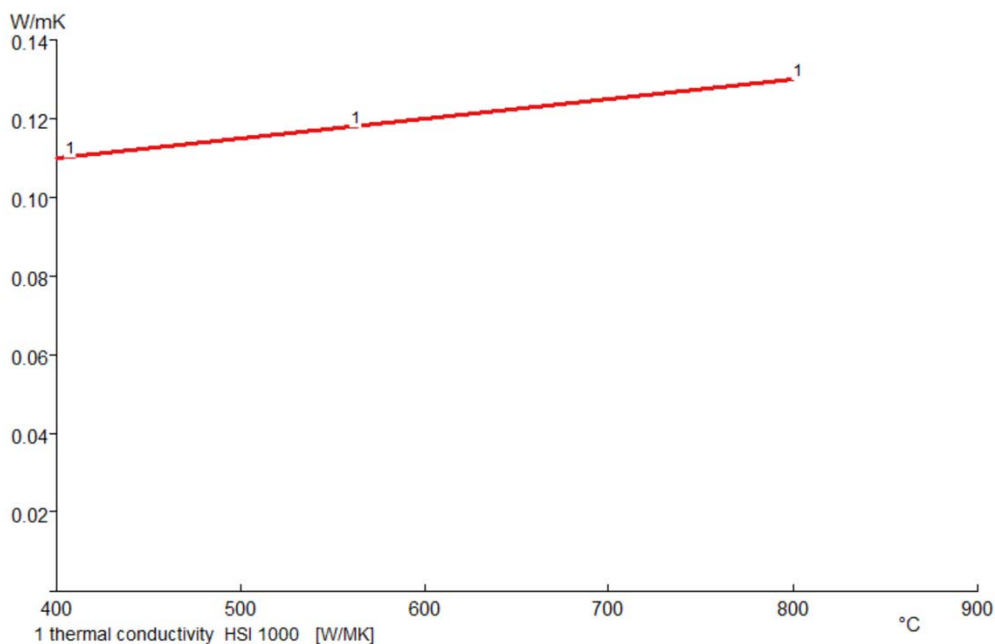
Applications

- Ladle & Tundish Insulation
- Lime Kiln and Cement Kiln Insulation
- High temperature gasket & sealings
- Boiler & Furnace Insulation
- Oil & Gas Burners Insulation
- Furnace, Dryer, and Oven Insulation
- Pipe & duct Insulation
- Metal clad Gaskets fillers
- Gaskets for centrifugal casting
- Glass rollers as washers on mandrel
- Stainless Steel Plant Rollers Insulation
- Electrical & home appliances insulation gaskets
- Fire Resistant Doors, Lifts, Safes, Cupboards

Features & Benefits

- Very Strong Boards with high compressive strength
- High temperature resistance upto 1000°C
- Low Thermal Conductivity at high temperatures
- High Electrical Resistance at high temperature
- High fire resistance and heat shield properties
- Easy to cut and punch
- Available in moulded pipe section for pipe insulation

Properties	HSI 1000
Base Materials	Wollastonite fibres & Calcium Silicate
Classification Temperature, °C	1000
Density, Kg/M3	1000
Thermal conductivity, W/m.K	
	400 °C
	600 °C
	800 °C
Tensile Strength, Mpa	5
Flexural Strength, Mpa	6
Shrinkage % @ 1000 °C	< 1
Compressive Strength, Mpa	8 - 10
Loss on Ignition %	8



HSI 800 | Technical Datasheet

Wedge HSI 800 are rockwool fibres based boards made of high temperature clay bonded with rockwool fibres. These boards have classification temperature of 850°C. These boards are most suitable for pipe insulation applications to reduce “Corrosion Under Insulation” in mineral wool pipe insulation applications.

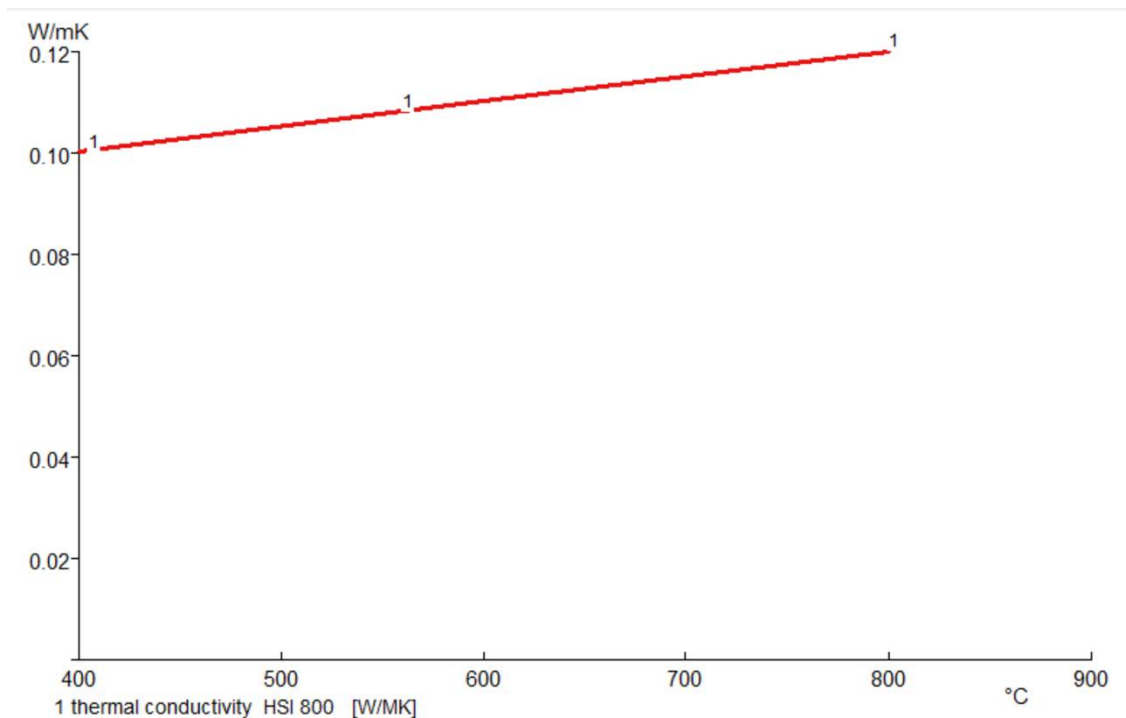
Applications

- Pipe Insulation & Pipe Support
- High temperature gasket & sealings
- Boiler & Furnace Insulation
- Oil & Gas Burners Insulation
- Furnace, Dryer, and Oven Insulation
- Pipe & duct Insulation
- Metal clad Gaskets fillers
- Aluminium & Steel Plant gaskets seals
- Electrical & home appliances insulation gaskets

Features & Benefits

- Strong Boards with high compressive strength
- High temperature resistance upto 850°C
- Low Thermal Conductivity at high temperatures
- High Electrical Resistance at high temperature
- High fire resistance and heat shield properties
- Easy to cut and punch
- Available in moulded pipe section for pipe insulation
- Good in reducing “Corrosion under Insulation”

Properties		HSI 800
Base Materials		Rockwool fibres & Refractory Clays
Classification Temperature, °C		850
Density, Kg/M3		850
Thermal conductivity, W/m.K		
	400 °C	0.09
	600 °C	0.10
	800 °C	0.11
Tensile Strength, Mpa		4
Flexural Strength, Mpa		5
Shrinkage % @ 800 °C		2
Compressive Strength, Mpa		5 - 6
Loss on Ignition %		15



AG06 650 | Technical Datasheet

Wedge AG06 650 are low density, low thickness, flexible commercial grade Aerogel Blanket having extremely high performance in pipe insulation in both industrial and buildings applications. The AG06 650 aerogel insulation blankets are made of high quality silica aerogel and of glass fiber needled blanket.

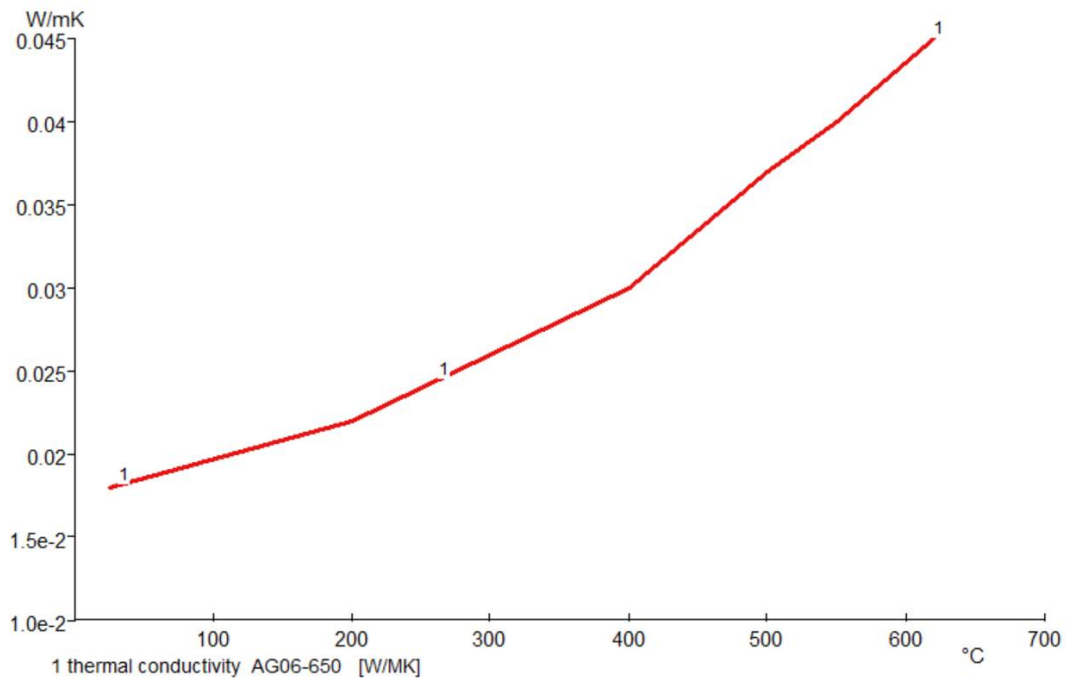
Applications

- Hot Water / Gas / Oil Pipeline
- High heat Steam Pipeline
- Petrochemical industry & power generation
- Back-up insulation in refractory lined pipes
- Exhaust systems
- Filler material for mattresses, cassettes, heat shields, expansion joints
- Prefabricated pipe with insulation
- Tanks, vessels and other equipment
- Pipe line insulation in Petrochemical plants
- Automobile, high-speed, train, and subway
- Building and Construction
- PFP (Passive Fire Protection)

Features & Benefits

- Lightweight, thin, custom made & very flexible
- Noncombustible & Environmentally friendly
- Resistant to most chemicals
- Superior Insulation Performance
- 4 to 5 times better than traditional insulation products with longer service life
- Reduced Insulation Thickness
- Hydrophobicity and Fire-proof
- Repel water from penetrating into pipes
- A1 rating of fire-proof
- Transportation Costs Savings
- Lower packing volume and lower weight can greatly cut down logistics costs

Properties	AG06 650
Base Materials	Aerogel Silica
Classification Temperature, °C	650 to (-) 50
Thickness, mm	5, 10
Density, Kg/M3	220
Thermal conductivity, W/m.K, at 25 °C	0.021

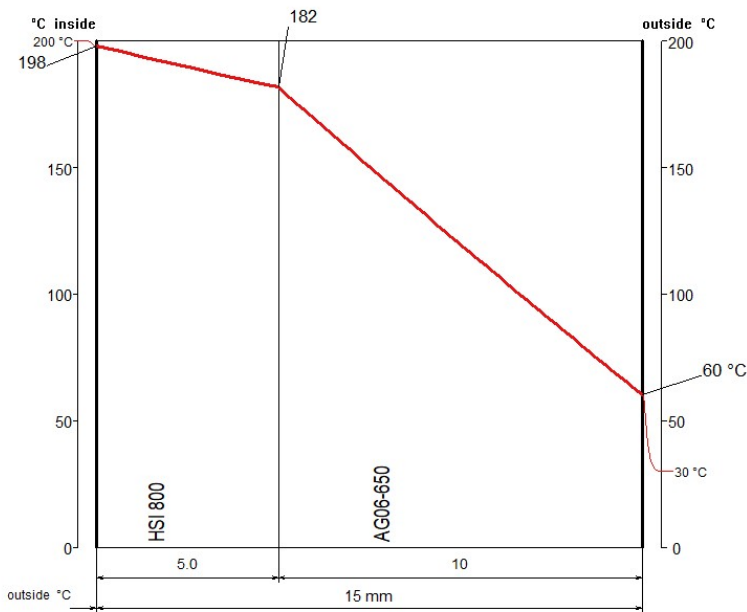


HSCI 200 | High Strength Composite Systems

	inside	outside	unit	lining characteristics
Ambient temperature	200	30	°C	69.13 W/m (220.1 W/m ²) Heat loss
Surface temperature	197.9	60.1	°C	0.2547 MJ/m heat storage
Heat transition coefficient	150	7.303 ⁽¹⁾	W/m ² K	1.805 kg/m weight
Diameter	70	100	mm	15 mm total thickness

(1) Calculation method ASTM C680, issue 2004 Emissivity=0.30 - wind =0 m/s

wall layers from inside to outside				temperature		
Material	Thickn. mm	Density kg/m ³	Classif. °C	border °C	mean °C	K mean W/mK
1 HSI 800	5.0	1100	800	197.9	189	0.0908
2 AG06-650	10	180	650	181.7	118	0.0201
				60.1		

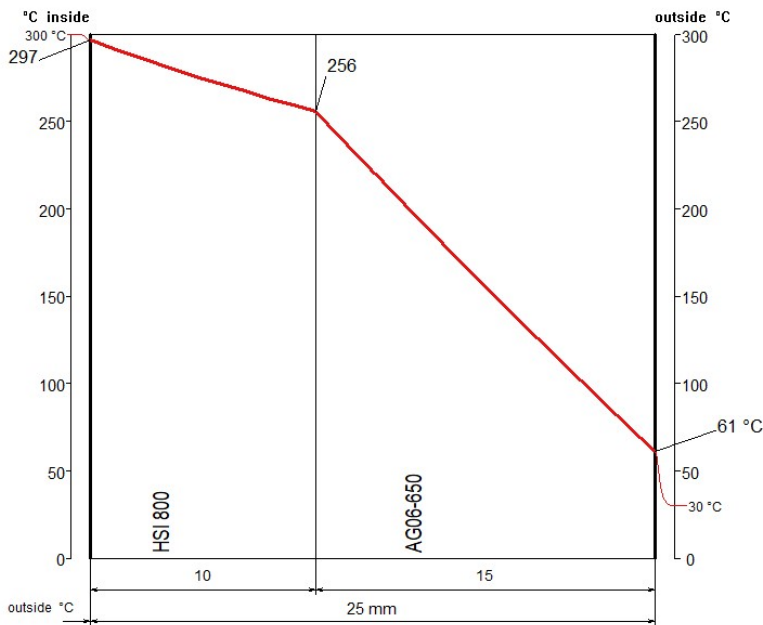


HSCI 300 | High Strength Composite Systems

	inside	outside	unit	lining characteristics
Ambient temperature	300	30	°C	72.56 W/m (231 W/m ²) Heat loss
Surface temperature	296.9	61.3	°C	0.6078 MJ/m heat storage
Heat transition coefficient	150	7.371 ⁽¹⁾	W/m ² K	2.794 kg/m weight
Diameter	50	100	mm	25 mm total thickness

(1) Calculation method ASTM C680, issue 2004 Emissivity=0.30 - wind =0 m/s

wall layers from inside to outside		Thickn.	Density	Classif.	temperature		K mean
Material		mm	kg/m ³	°C	border °C	mean °C	W/mK
1	HSI 800	10	1100	800	296.9	274	0.0942
2	AG06-650	15	180	650	255.7	151	0.0209
					61.3		

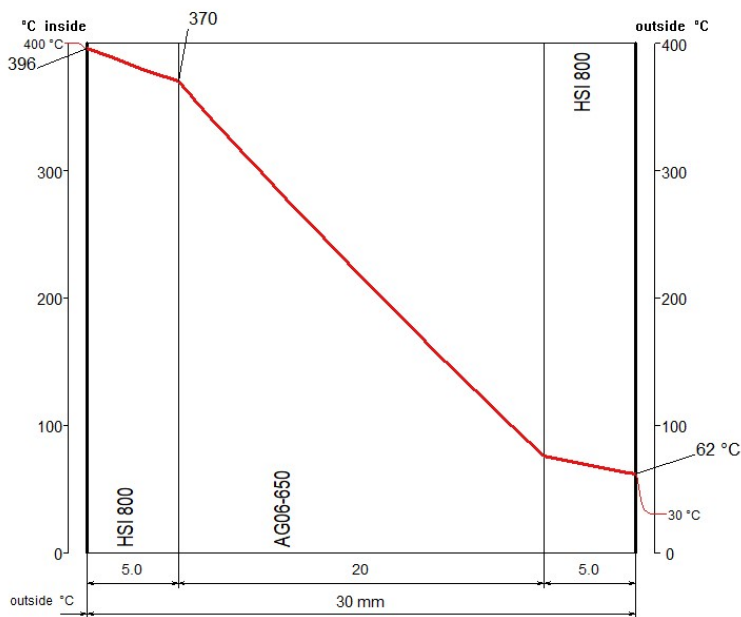


HSCI 400 | High Strength Composite Systems

	<u>inside</u>	<u>outside</u>	<u>unit</u>	<u>lining characteristics</u>
Ambient temperature	400	30	°C	73.41 W/m (233.7 W/m ²) Heat loss
Surface temperature	396.1	61.6	°C	0.4792 MJ/m heat storage
Heat transition coefficient	150	7.388 ⁽¹⁾	W/m ² K	3.211 kg/m weight
Diameter	40	100	mm	30 mm total thickness

(1) Calculation method ASTM C680, issue 2004 Emissivity=0.30 - wind =0 m/s

wall layers from inside to outside				temperature			
Material	Thickn.	Density	Classif.	border	mean	K mean	
	mm	kg/m ³	°C	°C	°C	W/mK	
1 HSI 800	5.0	1100	800	396.1	382	0.0991	
2 AG06-650	20	180	650	369.8	205	0.0222	
3 HSI 800	5.0	1100	800	75.9	69	0.0864	
				61.6			



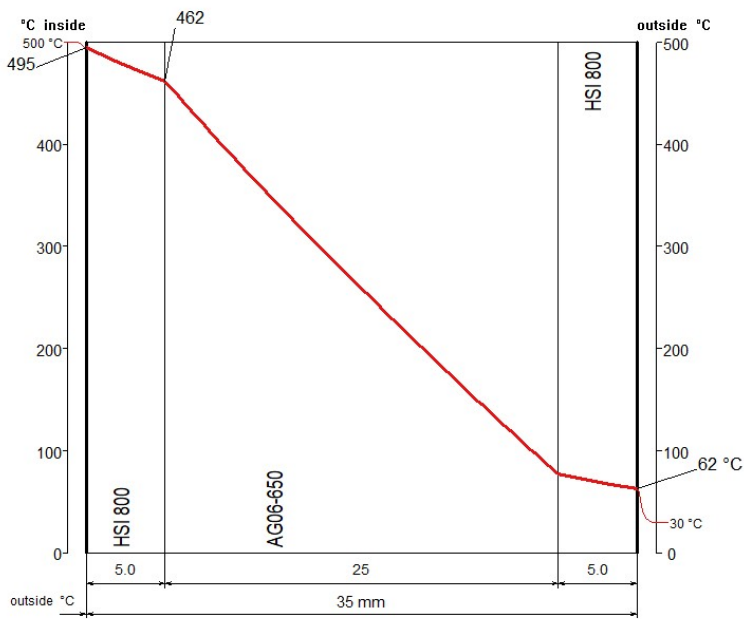
HSCI 500 | High Strength Composite Systems

	inside	outside	unit	lining characteristics
Ambient temperature	500	30	°C	75.26 W/m (239.6 W/m ²) Heat loss
Surface temperature	494.7	62.3	°C	0.5276 MJ/m heat storage
Heat transition coefficient	150	7.424 ⁽¹⁾	W/m ² K	3.165 kg/m weight
Diameter	30	100	mm	35 mm total thickness

(1) Calculation method ASTM C680, issue 2004 Emissivity=0.30 - wind =0 m/s

wall layers from inside to outside

Material	Thickn. mm	Density kg/m ³	Classif. °C	border °C	mean °C	K mean W/mK
1 HSI 800	5.0	1100	800	494.7	477	0.1038
2 AG06-650	25	180	650	461.5	237	0.0235
3 HSI 800	5.0	1100	800	76.9	69	0.0865
				62.3		



HSCI 600 | High Strength Composite Systems

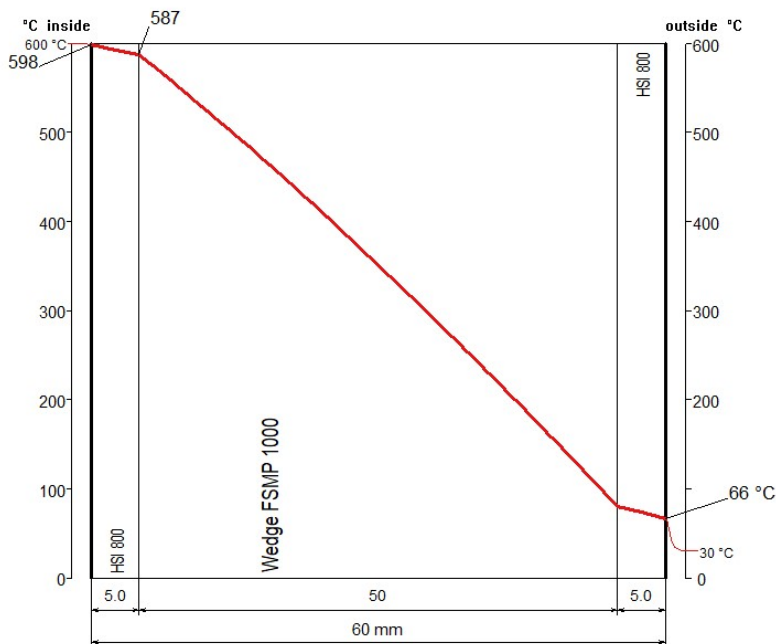
	inside	outside	unit
Ambient temperature	600	30	°C
Surface temperature	598.4	66.4	°C
Heat transition coefficient	150	6.602 ⁽¹⁾	W/m ² K

(1) Calculation method ASTM C680, issue 2004 Emissivity=0.30 - wind =0 m/s

lining characteristics
240.3 W/m ² Heat loss
6.84 MJ/m ² heat storage
22 kg/m ² weight
60 mm total thickness

wall layers from inside to outside

Material	Thickn. mm	Density kg/m ³	Classif. °C	temperature		K mean W/mK
				border °C	mean °C	
1 HSI 800	5.0	1100	800	598.4	593	0.1096
2 Wedge FSMP 1000	50	220	1050	587.4	346	0.0235
3 HSI 800	5.0	1100	800	80.3	73	0.0866
				66.4		



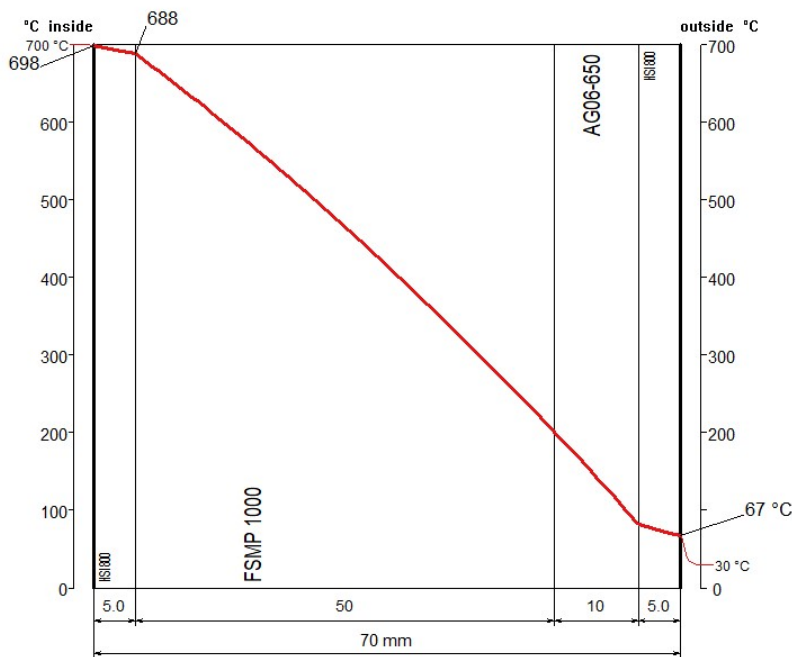
HSCI 700 | High Strength Composite Systems

	<u>inside</u>	<u>outside</u>	<u>unit</u>
Ambient temperature	700	30	°C
Surface temperature	698.4	67.2	°C
Heat transition coefficient	150	6.641 ⁽¹⁾	W/m ² K

(1) Calculation method ASTM C680, issue 2004 Emissivity=0.30 - wind =0 m/s

<u>lining characteristics</u>
247.2 W/m ² Heat loss
8.98 MJ/m ² heat storage
23.8 kg/m ² weight
70 mm total thickness

<u>wall layers from inside to outside</u>				<u>temperature</u>		
Material	Thickn. mm	Density kg/m ³	Classif. °C	border °C	mean °C	K mean W/mK
1 HSI 800	5.0	1100	800	698.4	693	0.1146
2 FSMP 1000	50	220	1050	687.6	458	0.0252
3 AG06-650	10	180	650	201.2	143	0.0207
4 HSI 800	5.0	1100	800	81.5	74	0.0866
				67.2		



HSCI 800 | High Strength Composite Systems

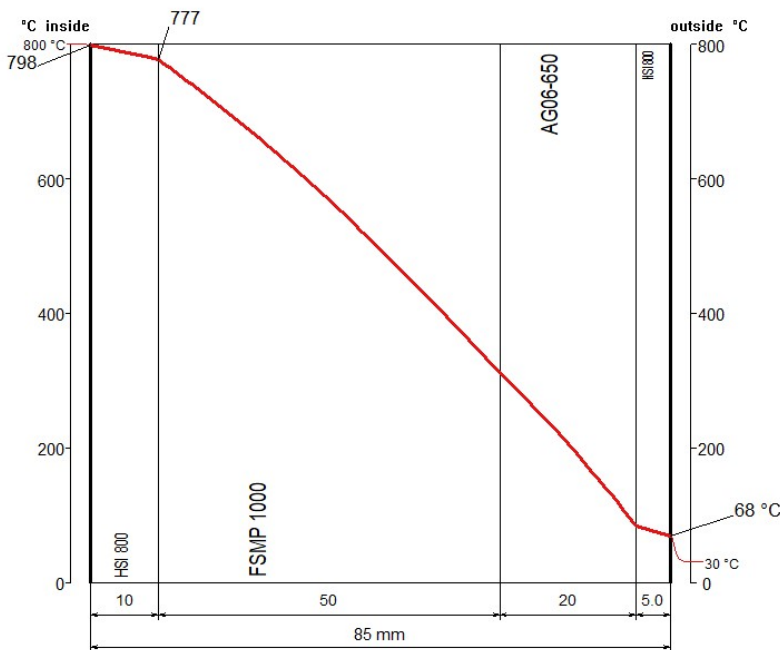
	inside	outside	unit
Ambient temperature	800	30	°C
Surface temperature	798.3	68.2	°C
Heat transition coefficient	150	6.688 ⁽¹⁾	W/m ² K

(1) Calculation method ASTM C680, issue 2004 Emissivity=0.30 - wind =0 m/s

lining characteristics
255.8 W/m ² Heat loss
15.58 MJ/m ² heat storage
31.1 kg/m ² weight
85 mm total thickness

wall layers from inside to outside

Material	Thickn. mm	Density kg/m ³	Classif. °C	temperature		
				border °C	mean °C	K mean W/mK
1 HSI 800	10	1100	800	798.3	788	0.1194
2 FSMP 1000	50	220	1050	776.9	560	0.0272
3 AG06-650	20	180	650	311.3	203	0.0221
4 HSI 800	5.0	1100	800	83	76	0.0867
				68.2		



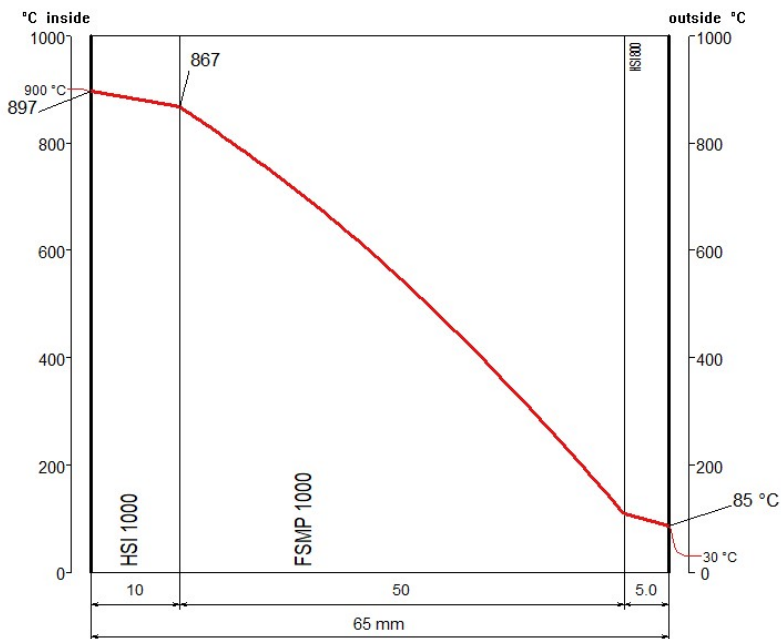
HSCI 900 | High Strength Composite Systems

	inside	outside	unit
Ambient temperature	900	30	°C
Surface temperature	897.3	85.3	°C
Heat transition coefficient	150	7.4 (1)	W/m ² K

(1) Calculation method ASTM C680, issue 2004 Emissivity=0.30 - wind =0 m/s

lining characteristics
409.6 W/m ² Heat loss
15.78 MJ/m ² heat storage
27.5 kg/m ² weight
65 mm total thickness

wall layers from inside to outside	Material	Thickn. mm	Density kg/m ³	Classif. °C	temperature		K mean W/mK
					border °C	mean °C	
1	HSI 1000	10	1100	1000	897.3	882	0.1341
2	FSMP 1000	50	220	1050	866.7	525	0.0265
3	HSI 800	5.0	1100	800	108.8	97	0.0874
					85.3		



HSCI 1000 | High Strength Composite Systems

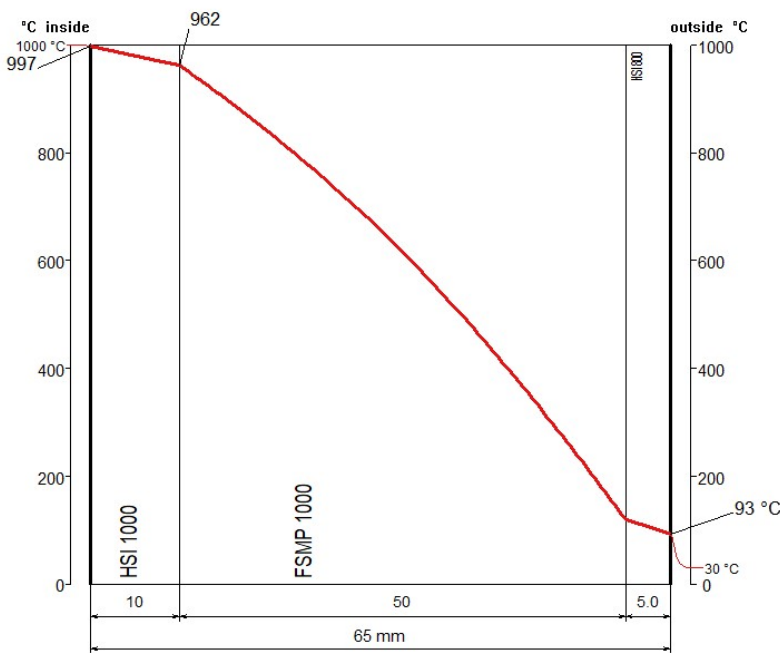
	inside	outside	unit
Ambient temperature	1000	30	°C
Surface temperature	996.8	92.5	°C
Heat transition coefficient	150	7.666 ⁽¹⁾	W/m ² K

(1) Calculation method ASTM C680, issue 2004 Emissivity=0.30 - wind =0 m/s

lining characteristics
479.5 W/m ² Heat loss
17.79 MJ/m ² heat storage
27.5 kg/m ² weight
65 mm total thickness

wall layers from inside to outside

Material	Thickn. mm	Density kg/m ³	Classif. °C	temperature		
				border °C	mean °C	K mean W/mK
1 HSI 1000	10	1100	1000	996.8	980	0.139
2 FSMP 1000	50	220	1050	962.3	590	0.0278
3 HSI 800	5.0	1100	800	119.9	106	0.0877
				92.5		



HSCI 1100 | High Strength Composite Systems

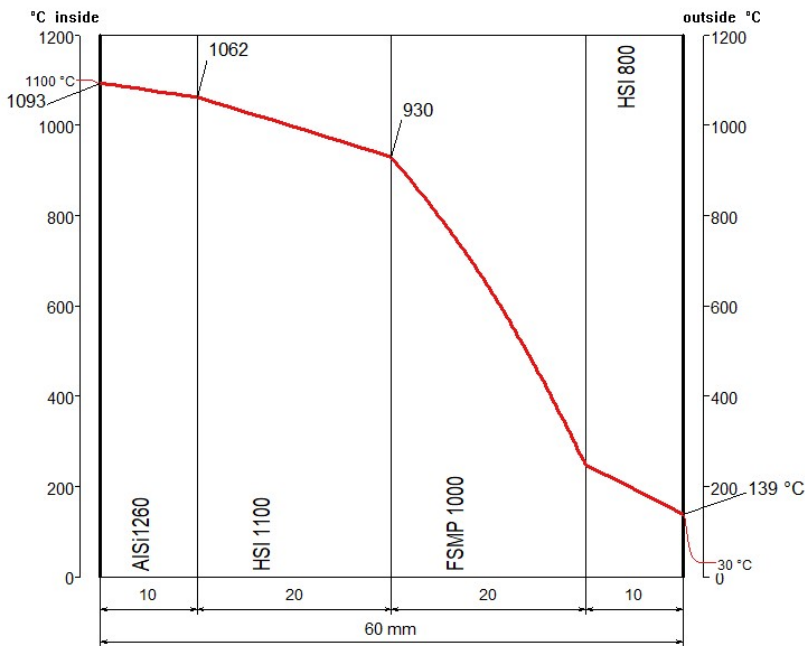
	inside	outside	unit
Ambient temperature	1100	30	°C
Surface temperature	1093.4	138.6	°C
Heat transition coefficient	150	9.142 ⁽¹⁾	W/m ² K

(1) Calculation method ASTM C680, issue 2004 Emissivity=0.30 - wind =0 m/s

lining characteristics
993.3 W/m ² Heat loss
28.49 MJ/m ² heat storage
38.7 kg/m ² weight
60 mm total thickness

wall layers from inside to outside

Material	Thickn. mm	Density kg/m ³	Classif. °C	temperature		
				border °C	mean °C	K mean W/mK
1 AISi1260	10	130	1250	1093.4	1078	0.319
2 HSI 1100	20	1100	1100	1062.2	996	0.1498
3 FSMP 1000	20	220	1050	929.6	623	0.0288
4 HSI 800	10	1100	800	247.9	194	0.0909
				138.6		



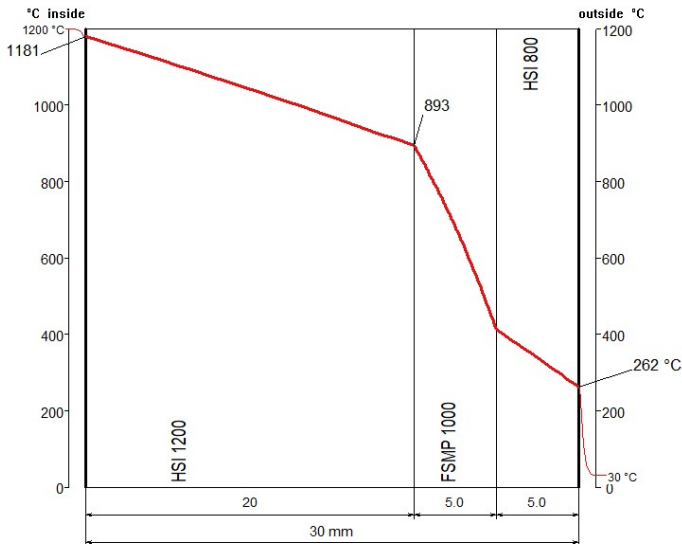
HSCI 1200 | High Strength Composite Systems

	inside	outside	unit
Ambient temperature	1200	30	°C
Surface temperature	1180.5	261.7	°C
Heat transition coefficient	150	12.62 ⁽¹⁾	W/m ² K

(1) Calculation method ASTM C680, issue 2004 Emissivity=0.30 - wind =0 m/s

lining characteristics
2924 W/m ² Heat loss
25.86 MJ/m ² heat storage
28.6 kg/m ² weight
30 mm total thickness

wall layers from inside to outside			temperature			
Material	Thickn. mm	Density kg/m ³	Classif. °C	border °C	mean °C	K mean W/mK
1 HSI 1200	20	1100	1200	1180.5	1040	0.204
2 FSMP 1000	5.0	220	1050	893.4	672	0.0305
3 HSI 800	5.0	1100	800	412.4	338	0.097
				261.7		



Wedge India

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