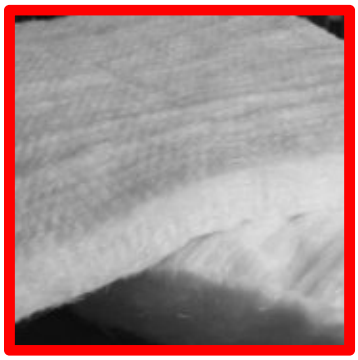
Insulation Materials

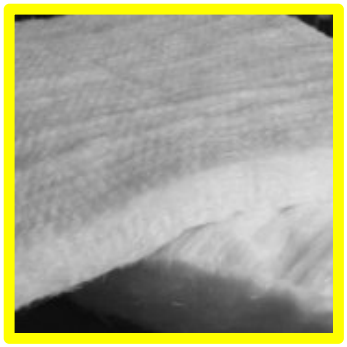
5

High Temperature
DeltaMax™ Slicone Foam
Insulation Page 5-1

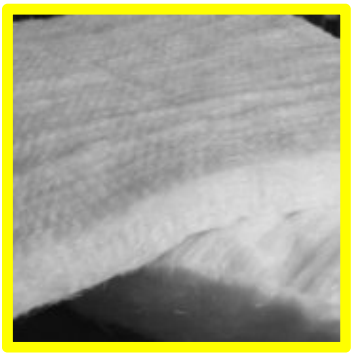
High Temperature DeltaMax™
Meta & Para Aramid Insulation Felts
Page 5-2



Very High Temperature
DeltaMax™ Needled
Fiberglass Insulation Page 5-4



InSilMax™ Extreme Temperature
Silica Insulation. Page 5-5



InSilMax™ XT Extreme Temperature
Silica Insulation. Page 5-6

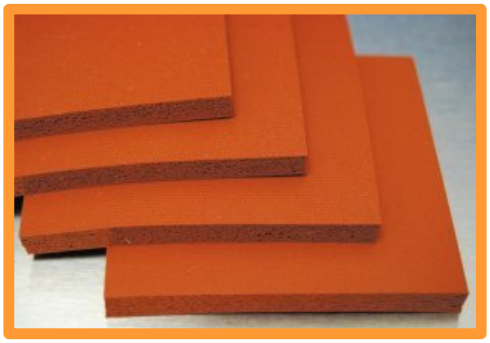
Extreme Temperature
CerMax™ Fibre Insulation
Page 5-7

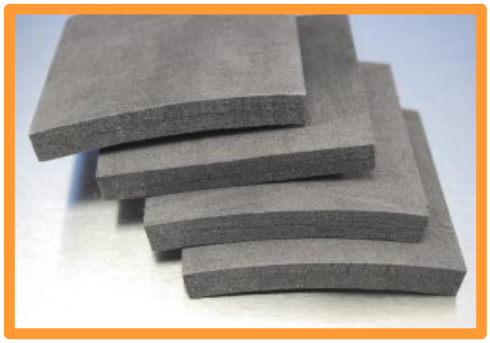
InSilSafe™ XT Extreme Temperature
Vitreous Silicate Insulation. Page 5-8

Silicone Sponge Foam - Closed Cell - Roll & Sheet

Low Thermal Conductivity Insulation

428°F / 220°C: DeltaMax™ High Temperature & Heat Resistant





- Thermal insulation sponge. Available in .250" and .500" thick (+/- .025).
- General purpose sponge is red in color. UL94 V-0 flame resistant is grey in colour.
- Compression deflection at 25% is 12.5 psi.
- Water absorption is 5% maximum, typically 1% measured.
- Thermal conductivity 0.110 W/mK.
- Specific Gravity 0.5
- Operating temperature -50°C to 230°C
- Compression set at 100°C (22 hours) - <20%
- Tensile Strength >100psi
- Elongation - >300%
- Ply adhesion to > 3 lbs/in
- Total mass loss, 125°C, 24 hrs, vacuum - <1%
- Tensile strength retention (250°C 3 days) - >70%
- Elongation retention (250°C 3 days) - >30%

Silicone Sponge Rubber Foam - General Purpose and also UL94 V-0 rated								
Part Number	Thickness in / mm		Color	Roll Width * in / cm		Roll Length ft / m max		Price per yard
IM-SSR-R-4	.250	6.35	Red	46	116.84	150	45.72	$ 324.43
IM-SSR-R-8	.500	12.7	Red	42	106.68	120	36.57	$ 447.37
IM-SSR-G-UL94-4	.250	6.35	Grey	46	116.84	150	45.72	$ 403.64
IM-SSR-G-UL94-8	.500	12.7	Grey	42	106.68	120	36.57	$ 517.17

Minimum order is 3 yards. -5% for roll lengths of 10, 20 or 30 yards. -15% for 50 yards

* Useable width is typically 2 inches less than roll width

Meta Aramid Nomex® Insulation Felt
450°F / 230°C PyroTection™ High Temperature Insulation and Protection
Heat Resistant Nomex®

- Can be used as an insulation.
- Can be used for filtration.
- Can be as a protection pad in hot processes to prevent marking of products.
- Coatings and PSA's available.
- Resin impregnated available to increase stiffness.
- Roll lengths up to 100metres / 328 feet available on thinner materials. Shorter roll length on thicker materials.

These needled pads can be used as insulation or protection in hot processes to prevent marking of products as they exit various drying/curing ovens.

PyroTection™ Felts - High Temperature & Flame Resistant Nomex®

230°C / 450°F Operating Temperature - 400°C / 750°C decomposition temperature

Part Number	Thickness in / mm		Weight oz/yd² / g/m²		Roll Width in / cm		Roll Length Yards	Price per yard / metre
Nomex® - color is off white								
IM-N-F-8082-10	.080	2.0	10	339	82	208	109	$ 45.28
IM-N-F-8082-14	.080	2.0	14	474	82	208		Call
IM-N-F-11082-6.5	.110	2.8	6.5	220	82	208	109	$ 67.20
IM-N-F-16082-7.5	.160	4.1	7.5	254	82	208		Call
IM-N-F-25082-14	.250	6.3	14	474	82	208		Call
IM-N-F-50072-53	.500	12.7	53	1797	72	182		Call
With Resin Stiffener								
IM-N-F-7082-14R	.070	1.7	14	474	82	208		Call
IM-N-F-11082-15R	.110	2.8	15	508	82	208		Call
IM-N-F-19072-28R	.190	4.8	28	949	72	182	55	$ 180.37
IM-N-F-30072-53R	.300	7.6	53	1797	72	182	55	$ 316.15

Para Aramid Kevlar® Insulation Felt

840°F / 450°C PyroTection™ High Temperature Insulation and Protection

Heat Resistant Kevlar®

- Can be used as an insulation.
- Can be as a protection pad in hot processes to prevent marking of products.
- Coatings and PSA's available.
- Resin impregnated available to increase stiffness.
- Roll lengths up to 100metres / 328 feet available on thinner materials. Shorter roll length on thicker materials.

These needled pads can be used as insulation or protection in hot processes to prevent marking of products as they exit various drying/curing ovens.

PyroTection™ Felts - High Temperature & Flame Resistant

Kevlar® / Kevlar-Nomex Blend / Kevlar-Polyester Layered

450°C / 840°F Operating Temperature - 525°C / 975°C decomposition temperature

Part Number	Thickness in / mm		Weight oz/yd^2 / g/m^2		Roll Width in / cm		Roll Length yards	Price per yard
Kevlar® - color is yellow								
IM-K-F-0440-3.2	.04	1.0	3.2	108	40	101		Call
IM-K-F-0563-5.5	.05	1.3	5.5	186	63	160	109	$ 40.23
Kevlar - Nomex Blend								
IM-K/N-F-16066-32	.16	4.1	32	1084	66	167	109	$ 192.26
With Resin Stiffener								
IM-K-F-19083-38R	.190	4.8	38	1288	83	210	109	$ 416.27
IM-K-F-48079-95R	.480	12.2	95	3221	79	200	44	$ 1146.20

Needled Fiberglass Insulation Felt / Matt / Batt

1200°F / 648°C: DeltaMax™ Very High Temperature, Heat and Flame Resistant *Premium Grade*

- Excellent insulation for sandwiching between front and rear (hot and cold side) layers of blankets & curtains.
- Non-flammable.
- Conforms to MIL-I-16411 Type II.
- Meets US Coast Guard 164.009 for incombustible materials.
- Meets MIL-I-24244 for corrosiveness.
- Thermal conductivity of .43 at 500°F and .53 at 649°.F.

1200°F / 648°C continuous rating, high insulation value

Needled fiberglass insulation felt / matt / batt is manufactured from 100% non-woven E-type fiberglass textile fibers. It is used in a variety of applications and specifically designed for use in aerospace, automotive, construction and industrial applications due to its low corrosiveness (meeting MIL-I-24244).

Used extensively in the production of removable pads for welding stress relieving, furnace and oven wall gap insulation, removable pipe insulation, gas and steam turbine power generating equipment blankets, etc.

Very High Temperature, Heat and Flame Resistant Needled Fiberglass Insulation Felt / Matt / Batt: Premium Grade

Part Number	Thickness in / mm		Density lbs/ft^3 / kg/m^3		Roll Width in / cm		Roll Length ft / m		Price per Yard / Metre
IM-FG-NEEDLED-0.25	¼	7	9	144	60	152	150	45.7	$ 25.20 / $ 27.47
IM-FG-NEEDLED-0.50	½	13	9	144	60	152	75	22.8	$ 35.40 / $ 38.59
IM-FG-NEEDLED-0.75	3/4	19	11	176	60	152	45	13.7	$ 42.69 / $ 46.67
IM-FG-NEEDLED-1.00	1	25	11	176	60	152	45	13.7	$ 49.98 / $ 54.48
Weight: 0.25 = 3oz/ft^2; 0.50 = 6oz/ft^2; 0.75 = 12oz/ft^2; 1.00 = 15oz/ft^2									

This Product is Available By-The-Yard / Metre

Silica Needled Insulation Felt / Matt / Batt - Premium Grade

1800°F / 982°C: InSilMax™ Extreme High Temperature Heat Flame Resistant

- An alternative to asbestos and ceramic based insulation materials.
- Highly flexible and minimal shrinkage.
- Melts above 3000°F / 1648°C.
- Produced from an extremely pure base fiber (SiO_2) and can be used at 2000°F / 1093°C continuously with excursions to 3000°F / 1650°C.

This Insulation is a needled blanket manufactured from amorphous silica. This material is an excellent alternative to Refractory Ceramic Fiber (RCF) or asbestos.

It is used in a variety of applications and specifically designed for use in aerospace, automotive, construction and industrial applications. Specific applications include: removable pads, furnace and oven insulation, pipe insulation, power generating equipment plus many more.

InSilMax™ Extreme High Temperature Heat & Flame Resistant Insulation

Part Number	Thickness in / mm		Density lbs/ft^3 / kg/m^3		Roll Width in / cm		Roll Length ft / m		Price per roll
IM-S-NEEDLED-M003-02	1/8	3	8	144	36	91	130	39	$ 1437.00
IM-S-NEEDLED-M007-04	¼	7	10	180	36	91	99	30	$ 1738.00
IM-S-NEEDLED-M013-08	½	13	10	180	36	91	49	15	$ 1732.00
IM-S-NEEDLED-M025-16	1	25	10	180	36	91	25	7.6	$ 1761.40

PRICING NOTE: DUE TO VOLATILITY IN RAW MATERIAL COSTS THE PRICING ON THIS PRODUCT MAY INCUR A SURCAHRGE AT TIME OF ORDERING

This Product is NOT Available By-The-Foot – Full Roll Only

Silica Insulation Felt / Matt / Batt - Premium High Purity

2000°F / 1093°C: InSilMax™ XT Extreme High Temperature Heat Flame Resistant

- An alternative to asbestos and ceramic based insulation materials.
- Highly flexible and minimal shrinkage.
- Melts above 3000°F / 1648°C.
- Produced from an extremely pure base fiber (SiO_2) and can be used at 2000°F / 1093°C continuously with excursions to 3000°F / 1650°C.

This Insulation is a needled blanket manufactured from amorphous silica. This material is an excellent alternative to Refractory Ceramic Fiber (RCF) or asbestos.

It is used in a variety of applications and specifically designed for use in aerospace, automotive, construction and industrial applications. Specific applications include: removable pads, furnace and oven insulation, pipe insulation, power generating equipment plus many more.

InSilMax™ XT Extreme High Temperature Heat & Flame Resistant Insulation

Part Number	Thickness in / mm		Density lbs/ft^3 / kg/m^3		Roll Width in / cm		Roll Length ft / m		Price per roll
IM-S-XT-N-M003-02	1/8	3	8	144	36	91	130	39	$ 1556.00
IM-S-XT-N-M007-04	¼	7	10	180	36	91	99	30	$ 1910.00
IM-S-XT-N-M013-08	½	13	10	180	36	91	49	15	$ 1903.20
IM-S-XT-N-M025-16	1	25	10	180	36	91	25	7.6	$ 1937.50

PRICING NOTE: DUE TO VOLATILITY IN RAW MATERIAL COSTS THE PRICING ON THIS PRODUCT MAY INCUR A SURCAHRGE AT TIME OF ORDERING

This Product is NOT Available By-The-Foot – Full Roll Only

Vitreous Silicate Insulation Felt / Matt / Batt

1800°F / 982°C: InSilSafe™ Extreme High Temperature Heat Flame Resistant

- Bio-soluble, organic free, vitreous silicate mineral fibre.
-
- An alternative to asbestos, silica and ceramic based insulation materials.
- Highly flexible and minimal shrinkage.
- Melts above 3000°F / 1648°C.
- Produced from a mineral fibre that can be used at 1800°F / 982°C continuously with excursions to 3000°F / 1650°C.

This Insulation is a needled blanket manufactured from Vitreous Silicate Fibre. This material is an excellent alternative to Refractory Ceramic Fiber (RCF), asbestos or Silica.

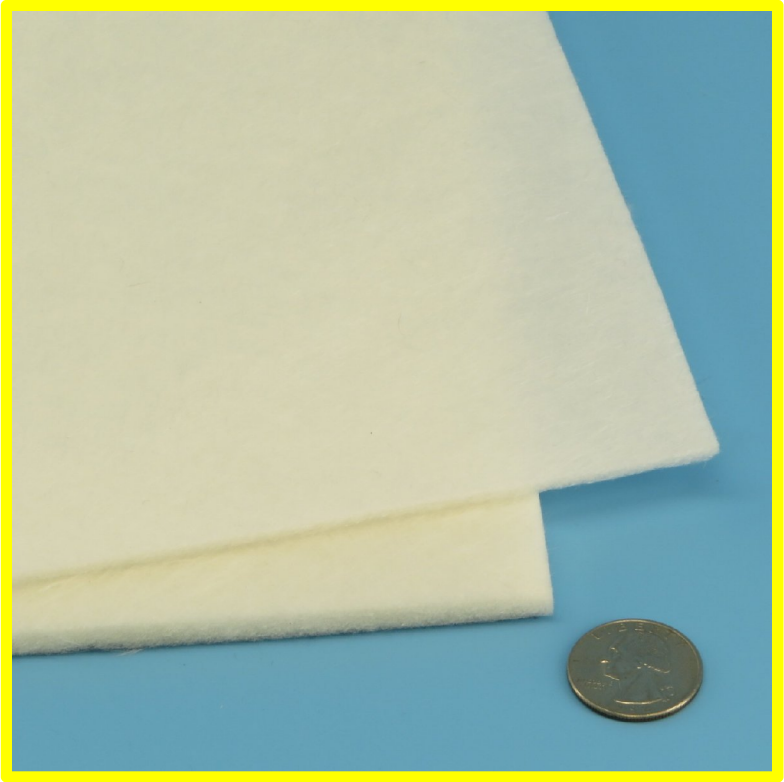
It is used in a variety of applications and specifically designed for use in aerospace, automotive, construction and industrial applications. Specific applications include: removable pads, furnace and oven insulation, pipe insulation, power generating equipment plus many more.

InSilSafe™ Extreme High Temperature Heat & Flame Resistant Insulation

Part Number	Thickness in / mm		Density lbs/ft^3 / kg/m^3		Roll Width in / cm		Roll Length ft / m		Price per roll
IM-ISS-24-M007-04	¼	7	10	180	24	91	100	30	$ 223.00
IM-ISS-24-M013-08	½	13	10	180	24	91	50	15	$ 175.67
IM-ISS-24-M025-16	1	25	10	180	24	91	25	7.6	$ 183.49
IM-ISS-48-M007-04	¼	7	10	180	48	121	100	30	$ 447.33
IM-ISS-48-M013-08	½	13	10	180	48	121	50	15	$ 351.33
IM-ISS-48-M025-16	1	25	10	180	48	121	25	7.6	$ 366.98
IM-ISS-54-M007-04	¼	7	10	180	54	137	100	30	$ 504.00
IM-ISS-54-M013-08	½	13	10	180	54	137	50	15	$ 396.00
IM-ISS-54-M025-16	1	25	10	180	54	137	25	7.6	$ 414.00
IM-ISS-60-M007-04	¼	7	10	180	60	152	100	30	$ 559.66
IM-ISS-60-M013-08	½	13	10	180	60	152	50	15	$ 439.71
IM-ISS-60-M025-16	1	25	10	180	60	152	25	7.6	$ 459.45

Non-Woven Silica Insulation Felt

2000°F / 1093°C: InSilPro™ Extreme High Temperature Heat Flame Resistant



- An alternative to asbestos and ceramic based insulation materials.
- Highly flexible and minimal shrinkage.
- Melts above 3000°F / 1648°C.
- Produced from an extremely pure base fiber (SiO_2) and can be used at 2000°F / 1093°C continuously with excursions to 3000°F / 1650°C.
- Flat orientation thermal conductivity of 0.18 at 200°F; 0.20 at 400°F; 0.23 at 600°F; 0.26 at 800°F.

This Insulation is a non-woven blanket manufactured from amorphous silica. An excellent alternative to Refractory Ceramic Fiber (RCF) or asbestos.

Flexible, but with handling stiffness - may be cut to size to fit complex fitting areas.

May also be encapsulated in facing materials and other fabrics.It is used in a variety of applications and specifically designed for use in aerospace, automotive, construction and industrial applications. Specific applications include: removable pads, furnace and oven insulation, pipe insulation, power generating equipment plus many more.

InSilPro™ Extreme High Temperature Heat & Flame Resistant Non-Woven Insulation

Part Number	Thickness in / mm		Density lbs/ft^3 / kg/m^3		Roll Width in / cm		Roll Length ft / m		Price per roll	Price per Yard
IM-S-NW-05-X-Y	7/32	5	8	144	36	91	50	15	$ 1925.00	$ 231.00
IM-S-NW-05-X-Y	7/32	5	8	144	60	152	50	15	$ 3208.33	$ 385.00
IM-S-NW-10-X-Y	13/32	10	8	144	36	91	25	7.5	$ 1487.49	$ 356.99
IM-S-NW-10-X-Y	13/32	10	8	144	60	152	25	7.6	$ 2479.17	$ 594.99

For the "X" Value, specify 36 for 36" roll width and 60 for 60" roll width.
For the Y value, specify R for full roll or number of linear yards for cut length

Ceramic Fiber Insulation: Premium Grade
2000°F / 1093°C: CerMax™ Extreme Temperature

- An alternative to asbestos based insulation materials.
- Highly flexible and minimal shrinkage.
- Melts above 3000°F / 1648°C.
- Produced from an extremely pure base fiber (SiO_2) and can be used at 2000°F / 1093°C continuously with excursions to 3000°F / 1650°C.
- This ceramic fiber insulation is a needled blanket manufactured from ceramic fiber and is an excellent alternative or replacement for asbestos.

It is used in a variety of applications and specifically designed for use in aerospace, automotive, construction and industrial applications. Specific applications include: removable pads, furnace and oven insulation, pipe insulation, power generating equipment plus many more.

CerMax Extreme High Temperature +Plus, Heat & Flame Resistant Ceramic Fiber Insulation

Part Number	Thickness in / mm		Density lbs/ft^3 / kg/m^3		Roll Width in / cm		Roll Length ft / m		Price per roll
IM-C-6-8-24*	.50	13	6	96	24	60	25	7.6	$ 163.33
IM-C-6-8-48	.50	13	6	96	48	121	25	7.6	$ 163.33
IM-C-8-8-24*	.50	13	8	128	24	60	25	7.6	$ 183.33
IM-C-8-8-48	.50	13	8	128	48	121	25	7.6	$ 183.33
IM-C-6-16-24	1	25	6	96	24	60	25	7.6	$ 161.67
IM-C-6-16-48	1	25	6	96	48	121	25	7.6	$ 323.33
IM-C-8-16-24	1	25	8	128	24	60	25	7.6	$ 180.00
IM-C-8-16-48	1	25	8	128	48	121	25	7.6	$ 360.00
IM-C-6-32-24	2	51	6	96	24	60	12.5	3.8	$ 160.83
IM-C-6-32-48	2	51	6	96	48	121	12.5	3.8	$ 321.67
IM-C-8-32-24	2	51	8	128	24	60	12.5	3.8	$ 176.67
IM-C-8-32-48	2	51	8	128	48	121	12.5	3.8	$ 356.67
IM-C-8-16-02**	1	25	8	128	2	5	25	7.6	$ 198.33 / box
IM-C-8-16-03***	1	25	8	128	3	7.6	25	7.6	$ 198.33 / box

* Minimum order 2 rolls ** 12 rolls per box / *** 8 rolls per box

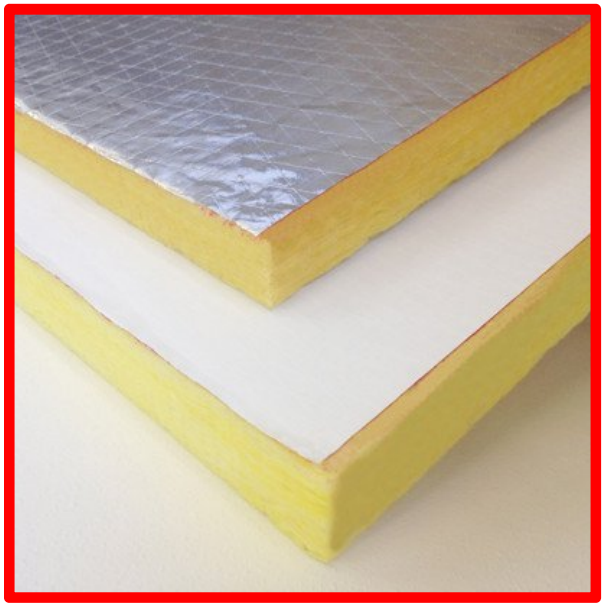
Thermal Conductivity: BTU•in./hr•ft2•°F (w/mK)

8 LB Density: @500°F (260°C) 0.44 (0.06); @1000°F (538°C) 0.87 (0.12); @1500°F (816°C) 1.45 (0.21) @1800°F (982°C) 1.83 (0.26); @2000°F (1093°C) 2.09 (0.30)

6 LB Density: @500°F (260°C) 0.47 (0.07); @1000°F (538°C) 1.01 (0.15); @1500°F (816°C) 1.73 (0.25) @1800°F (982°C) 2.19 (0.32)

Rigid Mineral Wool Insulation Board - Marine Approved

- **For Decks and Bulkheads requiring up to A-60 rating**
- **US Coast Guard / Transport Canada / Lloyds Register Approved**
- **Meets latest IMO 2010 FTP Code**



- Suitable for A-30 Steel Bulkhead, A-30 Steel Deck, A-60 Steel Bulkhead, A-60 Steel Bulkhead (restricted) and A-60 Steel Deck.
- Non combustible and fire resistant.
- Hydrophobic.
- Reinforced aluminum foil facing on one side. Also available plain (no facing) or with white fiberglass cloth one side.
- 6 lb/ ft3 density.
- Operating temperature up to 1200°F / 650°C and withstanding flame exposure to 2150°F / 1177°C without melting.

- Flame spread Index = 0, Smoke development index = 0. ASTM E84 (UL 723), CAN/ULC S102
- Thermal resistance: R-value/inch 75°F: 4.1 hr.ft2/BTU (0.72m^2K/W)
- Thermal conductivity: .24 (BTU.in/hr.ft^2.°F) at 75°F
- Water absorption: <1% Weight
- Suitable for steel pin or wire mesh support installation. Easily cut to size.

Mineral Wool Insulation Board - Aluminum Foil Faced - Marine Approved							
Part Number	**Thickness in / mm**		**Density**	**Board Width in / cm**		**Board Length in / cm**		**Price per Panel**
IM-MWR-AL--50	2"	51	6 lb/ft2	24	60.9	48	121.8	$ 60.00

US Coast Guard Certificate of Approval: 164.107/16/0, 164.107/17/0, 164.109/26/0, 164.112/142/0

Transport Canada Certificate of Approval: LRTC 10-60002, LRTC 10-60001, LRTC 10-60004

Lloyds Register Certificate of Approval: SAS F090281, SAS F090280, SAS F090283