Apex Seal

Product Catalog

Category: Packing

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Expanded Graphite Packing

APEX1000 Expanded graphite packing

Braided from low sulphur expanded graphite yarns which are reinforced by cotton fiber or glass fiber. The packing shows good thermal conductivity, chemical resistance and high elasticity. In addition, it has low friction factor and does not damage the shafts or stems.

APEX1000C Graphite packing with corrosion inhibitor

The corrosion inhibitor acts as a sacrificial anode to protect the valve stem and stuffing box.

Applications:

APEX1000 & APEX1000C are multi-service packings capable of a wide variety of uses throughout a plant. They can be used in valves, pumps, expansion joints, mixers and agitators in high temperature, high pressure environments of hydrogenation plants, paper mills, power stations, refineries and industries where effective sealing is vital.
A recommended method is to use the graphite packing rings in conjunction with AP-PR1600 carbon fiber anti-extrusion packing rings.

Service Limits:

Temperature		-220°C~+550°C (+650°C in steam)
Pressure Shaft speed	Rotating	15bar, 12m/s
	Reciprocating	50bar, 2m/s
	Valve	200bar, 2m/s
PH range		0~14
Density		1.1~1.3g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil; As packing rings (AP-PR1000, AP-PR1000C).

Dimension Table:

For packings with density of 1.2g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	33.3	23.1	13.0	8.3	5.8	4.3	3.7	3.3	2.6	2.1	1.3
Appr. g/m	30.0	43.2	76.8	120.0	172.8	235.2	270.0	307.2	388.8	480.0	750.0
Kgs/coil	5									10	

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Reinforced Graphite Packing

APEX1000R Reinforced graphite packing

Braided from low sulphur expanded graphite yarns and reinforced with nickel wire, the packing shows greater mechanical strength, meanwhile it still retains all the inherent benefits of APEX1000 graphite packing, such as good thermal conductivity and chemical resistance, very low friction factor, etc.
Other reinforcing materials such as stainless steel wire are also available on request.

APEX1000RC Reinforced graphite packing with corrosion inhibitor

The corrosion inhibitor acts as a sacrificial anode to protect the valve stem and stuffing box.

Applications:

APEX1000R & APEX1000RC are multi-service packings capable of a wide variety of uses throughout a plant. They apply to most chemicals, acids & alkalis, and are very suitable for steam turbines, high temperature motor actuated valves, high temperature and high pressure valves and steam services.
A recommended method is to use the graphite packing rings in conjunction with AP-PR1600 carbon fiber anti-extrusion packing rings.

Service Limits:

Temperature		-220°C~+550°C (+650°C in steam)
Pressure Shaft speed	Agitator	50bar, 2m/s
	Valve	250bar, 2m/s
PH range		0~14
Density		1.1~1.3g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil;
As packing rings (AP-PR1000R, AP-PR1000RC).

Dimension Table:

For packings with density of 1.2g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	33.3	23.1	13.0	8.3	5.8	4.3	3.7	3.3	2.6	2.1	1.3
Appr. g/m	30.0	43.2	76.8	120.0	172.8	235.2	270.0	307.2	388.8	480.0	750.0
Kgs/coil	5									10	

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Graphite + Carbon Fiber Packing

APEX1003 Graphite packing reinforced with carbon fiber

The packing is braided from low sulphur expanded graphite yarns which are reinforced with high strength, high modulus continuous carbon fiber filament in each single yarn. It is then impregnated in mixture of graphite powder, molybdenum disulfide and PTFE emulsion, and processed with high temperature curing treatment. The packing shows excellent chemical stability, thermal conductivity, and high intensity.

APEX1016 Graphite packing with carbon fiber corners

The packing is diagonally braided from expanded flexible graphite, with high quality carbon fiber filaments reinforced at the corners. This kind of structure makes its anti-extrusion capacity three times more than APEX1000 packing, and also increases the compressive strength of the packing.

Applications:

APEX1003 is particularly applicable to rotary pumps and reciprocating pumps with mediums of strong chemical corrosive, or containing particles.

APEX1016 is widely used for both static and dynamic sealing applications. Particularly suitable for valves, pumps, expansion joints, mixers and agitators in high temperature and high pressure environments in paper mills, power stations and chemical plants.

Service Limits:

Style		**APEX1003**	**APEX1016**
Temperature		-220°C~+450°C (+650°C in steam)	
Pressure Shaft speed	Rotating	15bar, 20m/s	25bar, 20m/s
	Reciprocating	100bar, 2m/s	100bar, 2m/s
	Valve	200bar, 2m/s	200bar, 2m/s
PH range		0~14	
Density		1.2~1.4g/cm^3	0.95~1.15g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil; As packing rings (AP-PR1003, AP-PR1016).

Dimension Table:

For packings with density of 1.05g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	38.0	26.5	14.9	9.5	6.6	4.9	4.2	3.7	2.9	2.4	1.5
Appr. g/m	26.3	37.8	67.2	105.0	151.2	205.8	236.3	268.8	340.2	420.0	656.3
Kgs/coil	5									10	

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Graphite + PTFE Packing

APEX1000P Graphite packing with PTFE impregnation

The packing is braided from expanded flexible graphite yarns which are reinforced by cotton fiber or glass fiber, and then impregnated with PTFE resin. Compared with traditional graphite packing, it has better cross-section tightness, structural strength and lower friction factor, protecting shafts and stems against abrasion.

APEX1040 Graphite packing with PTFE corners

The packing contains the advantages of both graphite and PTFE. The PTFE corners can effectively prevent the graphite being extruded.

Applications:

Widely used for both static and dynamic sealing applications. Particularly suitable for valves, pumps, expansion joints, mixers and agitators in high temperature and high pressure environments in paper mills, power stations and chemical plants.

Service Limits:

Temperature		-150°C~+260°C
Pressure Shaft speed	Rotating	15bar, 12m/s
	Reciprocating	50bar, 2m/s
	Valve	200bar, 2m/s
PH range		0~14
Density		1.1~1.3g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil; As packing rings (AP-PR1000P, AP-PR1040).

Dimension Table:

For packings with density of 1.2g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	33.3	23.1	13.0	8.3	5.8	4.3	3.7	3.3	2.6	2.1	1.3
Appr. g/m	30.0	43.2	76.8	120.0	172.8	235.2	270.0	307.2	388.8	480.0	750.0
Kgs/coil	5									10	

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Super Duty Valve Packing

APEX1000M Graphite packing with wire mesh

Braided from high quality low sulphur expanded graphite yarns which have been pre-wrapped with nickel wire mesh individually.

Other wrapping wire mesh materials such as stainless steel wire mesh are also available on request.

APEX1000MC Graphite packing with wire mesh & corrosion inhibitor

The corrosion inhibitor acts as a sacrificial anode to protect the valve stem and stuffing box.

APEX1000RM Reinforced graphite packing with wire mesh

Compared with APEX1000M, each yarn of the packing is additionally reinforced with nickel wire or stainless steel wire in the core.

Applications:

Specially designed as super high temperature and high pressure valve stem packings. They have high performance yet cost-effective.

Service Limits:

Temperature	-220°C~+550°C (+650°C in steam)
Pressure	500bar
Speed	2m/s
PH range	0~14
Density	1.2~1.4g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil;

As packing rings (AP-PR1000M, AP-PR1000MC, AP-PR1000RM).

Dimension Table:

For packings with density of 1.3g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	30.8	21.4	12.0	7.7	5.3	3.9	3.4	3.0	2.4	1.9	1.2
Appr. g/m	32.5	46.8	83.2	130.0	187.2	254.8	292.5	332.8	421.2	520.0	812.5
Kgs/coil	5									10	

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Die-formed Graphite Ring

AP-DR1000 Die-formed graphite ring

The rings are made from low sulphur expanded graphite without adding any fillers or binders. They are compressed in precision molding tools to the required shape and density.
They are generally in square cross section. Special V-shaped or wedge-shaped cross section graphite rings are also available. The profiled graphite rings are suitable for high pressure sealing applications.

AP-DR1000R Reinforced die-formed graphite ring

The rings are molded from pure flexible graphite with inserted metal foil or mesh as reinforcement. They have better compression performance.

AP-DR1000C Die-formed graphite ring with corrosion inhibitor

The corrosion inhibitor acts as a sacrificial anode to protect the valve stem and stuffing box.

AP-DR1020 Die-formed wedge graphite ring

As high-precision seals, the rings give a very good sealing result with long service life combined with very little wear. They are applicable for use on valves with screwed and bolted bonnets in steam and water. All the graphite rings are available with metal end caps on request.

Applications:

They have all the characteristics of expanded graphite, withstanding violent alteration of temperature and pressure. Ideal for valves and almost all static sealing applications.
The wedge graphite rings are normally used as self-sealing gaskets in high-pressure valves, e.g. for power plants at high temperatures, offering the end users improved reliability and leak tightness of pressure seal bonnet joints.

Service Limits:

Temperature		-220°C~+550°C
Pressure Shaft speed	Fan (dry)	10bar, 10m/s
	Agitator	50bar, 5m/s
	Valve	500bar, 2m/s
PH range		0~14
Density (non-reinforced rings)		1.45~1.6g/cm^3

Forms of Supply:

As pre-pressed rings (integral or split). Split rings can be straight or beveled cut.
* For seal rings with special section shapes, e.g. rectangular or wedge cross section, or rings with cap, please provide detailed drawings and dimensions when ordering.

Dimensions:

Minimum cross section: 3mm; Maximum diameter: 1000mm.

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Carbonized Fiber Packing

APEX1500 Carbonized fiber packing

The packing is braided from anti-shrinkage pre-oxygen polyacrylonitrile fiber, and impregnated with PTFE emulsion containing graphite particles. Compared with traditional carbon fiber packing, it is not brittle, and suitable for high line speed applications.

With the high strength and good thermal conductivity of the pre-oxygen fiber, and excellent lubrication of PTFE and graphite, the packing does not damage shafts, and is capable of long-term use.

APEX1500G Carbonized fiber packing with graphite

Braided from pre-oxygen polyacrylonitrile fiber and impregnated with PTFE emulsion containing graphite particles.

APEX1500R Reinforced carbonized fiber packing

The packing is reinforced with nickel wire which increases mechanical strength. Usually used in static sealing applications.

Applications:

They can be used in weak acids and alkalis or mediums containing few solid particles, suitable for both dynamic and static sealing applications. Mainly used in centrifugal pumps, plunger pumps, mixers, agitators and valves. Particularly ideal for use in hot water, condensate and primary coolant pumps.

Service Limits:

Temperature		-50°C~+260°C
Pressure Shaft speed	Rotating	20bar, 20m/s
	Reciprocating	20bar, 2m/s
	Valve	100bar, 2m/s
PH range		2~12
Density		1.15~1.35g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil;

As packing rings (AP-PR1500, AP-PR1500G, AP-PR1500R).

Dimension Table:

For packings with density of 1.25g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	31.9	22.2	12.5	8.0	5.6	4.1	3.6	3.1	2.5	2.0	1.3
Appr. g/m	31.3	45.0	80.0	125.0	180.0	245.0	281.3	320.0	405.0	500.0	781.3
Kgs/coil	5									10	

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Carbon Fiber Packing

APEX1600 Carbon fiber packing

The packing is braided from softened high-strength carbon fiber continuous filaments and impregnated with graphite and special lubricants to form a dense structure with good self-lubrication and inhibit leakage.

APEX1600R Reinforced carbon fiber packing

The packing is reinforced with nickel wire which increases mechanical strength. Usually used in static sealing applications.

Applications:

APEX1600 is designed for pumps or valves in high pressure and high temperature applications. It can be used as stand-alone packing rings or in combination with AP-PR1000 as anti-extrusion rings. When combined with AP-DR1000 pure graphite rings, it provides a perfect seal, suitable for use in dry-running devices such as fans and air compressors. Widely used in mediums like water, steam, acids and alkalis in power stations, refineries, boiler plants, etc.
APEX1600R is commonly used in steam turbines, high-temperature electric valves and high-temperature high-pressure valves for general applications.

Service Limits:

Temperature		-50°C~+450°C (+650°C in steam)
Pressure	Rotating	25bar, 20m/s
	Reciprocating	100bar, 2m/s
	Valve	200bar
PH range		0~14
Density		1.2~1.4g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil; As packing rings (AP-PR1600, AP-PR1600R).

Dimension Table:

For packings with density of 1.3g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	30.8	21.4	12.0	7.7	5.3	3.9	3.4	3.0	2.4	1.9	1.2
Appr. g/m	32.5	46.8	83.2	130.0	187.2	254.8	292.5	332.8	421.2	520.0	812.5
Kgs/coil	5									10	

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Asbestos Packing

APEX2000 Dusted asbestos packing

Square braided from high quality dusted asbestos yarns. It has flexible structure.
Depending on the grades of asbestos materials selected, the maximum serving temperatures of the packing could be different.

APEX2100 Dust free asbestos packing

Square braided from dust free asbestos fiber yarns.

Applications:

Designed for static sealing purpose. Used as filler material or thermal insulation material in high temperature operating conditions. Suitable for applications where square cross-section packing is required.

Service Limits:

Style	APEX2000	APEX2100
Maximum temperature	250°C~550°C*	550°C
Density	1.1~1.2g/cm^3	1.0~1.1g/cm^3

* Depending on different grades of asbestos materials selected.

Normal Packing:

5kgs or 10kgs per roll, then 50kgs in a woven bag.

Dimension Table:

For packings with density of 1.1g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	36.4	25.3	14.2	9.1	6.3	4.6	4.0	3.6	2.8	2.3	1.5
Appr. g/m	27.5	39.6	70.4	110.0	158.4	215.6	247.5	281.6	356.4	440.0	687.5
Kgs/coil	5									10	

Remarks:

Grades of dusted asbestos yarns:

The dusted asbestos yarns are divided into different grades with different maximum temperature resistance and tensile strength as below:

Grade	C	B	A	AA	AAA	AAAA
Asbestos content	≥75%	≥83%	≥86%	≥93%	≥97.5%	≥99.6%
Ignition loss	32.1%~35%	28.1%~32%	24.1%~28%	19.1%~24%	15.1%~19%	≤15%
Max. temperature	250°C	300°C	350°C	400°C	450°C	550°C

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Graphited Asbestos Packing

APEX2000G Graphited asbestos packing with lube oil

Braided from high quality dusted asbestos yarns and impregnated with graphite and lubricant oil. It has good elasticity and lubricity.

APEX2000RG Graphited asbestos packing reinforced with metal wire

Braided from high quality dusted asbestos yarns reinforced by metal wire, and impregnated with graphite and lubricant oil.

The normal reinforcing material selected is stainless steel wire, which is of good performance and cost effective. It could also be nickel wire, or brass wire on special requirements.

Applications:

APEX2000G:

Designed for dynamic sealing applications. Used as stuffing in pumps (especially boiler feed pumps) and valves. Resistant to alkaline solutions, inert fluids, steam, gases, hot water and salt solutions.

APEX2000RG:

Designed for static sealing applications, such as hand holes, manholes, lids, valves etc.

Service Limits:

Style	APEX2000G	APEX2000RG
Maximum temperature	200°C~500°C*	250°C~550°C*
Maximum pressure	80bar	150bar
Shaft speed	10m/s	-----
PH range	4~10	2~13
Density	1.2~1.4g/cm^3	

* Depending on different grades of asbestos materials selected.

Forms of Supply:

5kgs or 10kgs per roll, then suitable quantity in woven bag or carton.

Dimension Table:

For packings with density of 1.3g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	30.8	21.4	12.0	7.7	5.3	3.9	3.4	3.0	2.4	1.9	1.2
Appr. g/m	32.5	46.8	83.2	130.0	187.2	254.8	292.5	332.8	421.2	520.0	812.5
Kgs/coil	5									10	

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Asbestos Packing with PTFE

APEX2000P Asbestos packing with PTFE

Braided from high quality dusted asbestos yarns and thoroughly impregnated with PTFE. It has good corrosion resistance and long service life.

APEX2000PL Asbestos packing with PTFE & lube oil

The packing is similar with APEX2000P, but is additionally treated with special lubricant oil, which makes it more flexible. Can be used in high-speed rotating stainless steel shafts or chrome-plated shafts without causing wear.

Applications:

Suitable for both static and dynamic sealing applications, especially for medium-pressure high-speed pumps.

Service Limits:

Style	APEX2000P	APEX2000PL
Maximum temperature	260°C	260°C
Maximum pressure	100bar	100bar
Shaft speed	10m/s	12m/s
PH range	2~13	2~13
Density	1.2~1.4g/cm^3	1.55~1.75g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil; As packing rings (AP-PR2000P, AP-PR2000PL).

Dimension Table:

For packings with density of 1.3g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	30.8	21.4	12.0	7.7	5.3	3.9	3.4	3.0	2.4	1.9	1.2
Appr. g/m	32.5	46.8	83.2	130.0	187.2	254.8	292.5	332.8	421.2	520.0	812.5
Kgs/coil	5									10	

For packings with density of 1.65g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	24.2	16.8	9.5	6.1	4.2	3.1	2.7	2.4	1.9	1.5	1.0
Appr. g/m	41.3	59.4	105.6	165.0	237.6	323.4	371.3	422.4	534.6	660.0	1031.3
Kgs/coil	5									10	

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Round Asbestos Packing

APEX2010 Round braided dusted asbestos packing

Similar with packing style APEX2000, but in round section.

Depending on the grades of asbestos materials selected, the maximum serving temperatures of the packing could be different.

APEX2110 Round braided dust free asbestos packing

Round braided from dust free asbestos fiber yarns.

Applications:

Designed for static sealing purpose. Used as filler material or thermal insulation material in high temperature operating conditions. Suitable for applications where round cross-section packing is required.

Service Limits:

Style	APEX2010	APEX2110
Maximum temperature	250°C~550°C*	550°C
Density	1.0~1.1g/cm^3	0.9~1.0g/cm^3

* Depending on different grades of asbestos materials selected.

Normal Packing:

5kgs or 10kgs per roll, then 50kgs in a woven bag.

Dimension Table:

For round braided packings with density of 1.0g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	51.0	35.3	19.9	12.7	8.8	6.5	5.7	5.0	3.9	3.2	2.0
Appr. g/m	19.6	28.3	50.3	78.5	113.1	153.9	176.7	201.1	254.5	314.2	490.9
Kgs/coil	5									10	

Remarks:

Grades of dusted asbestos yarns:

The dusted asbestos yarns are divided into different grades with different maximum temperature resistance and tensile strength as below:

Grade	C	B	A	AA	AAA	AAAA
Asbestos content	≥75%	≥83%	≥86%	≥93%	≥97.5%	≥99.6%
Ignition loss	32.1%~35%	28.1%~32%	24.1%~28%	19.1%~24%	15.1%~19%	≤15%
Max. temperature	250°C	300°C	350°C	400°C	450°C	550°C

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PTFE Packing

PTFE has characteristics of excellent corrosion resistance, good self-lubrication and non-sticking. However, it is also a substance with low heat conductivity, cold flow and a large thermal expansion coefficient.

APEX4000 Pure PTFE packing

The soft packing is braided from PTFE yarns which are twisted from pure PTFE film strips, without any additional lubricant. Mainly used for static sealing applications.

APEX4000L Pure PTFE packing with lube oil

Braided from PTFE yarns which are treated with special lubrication. Suitable for both dynamic and static sealing applications.

Applications:

They are universal packings applicable for most mediums. Suitable for low-pressure valve and low shaft speed applications, and where there are high requirements of purity and good corrosion resistance for the packings, such as food industries, pharmaceutical factories, paper mills, chemical fiber plants, etc.

Service Limits:

Style		**APEX4000**	**APEX4000L**
Temperature		-150°C~+260°C	
Pressure	Rotating	15bar	15bar
	Reciprocating	100bar	100bar
	Valve	150bar	200bar
Shaft speed		2m/s	10m/s
PH range		0~14	
Density		1.15~1.35g/cm^3	1.55~1.75g/cm^3

Dimension Table:

For packings with density of 1.25g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	31.9	22.2	12.5	8.0	5.6	4.1	3.6	3.1	2.5	2.0	1.3
Appr. g/m	31.3	45.0	80.0	125.0	180.0	245.0	281.3	320.0	405.0	500.0	781.3
Kgs/coil	5									10	

For packings with density of 1.65g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	24.2	16.8	9.5	6.1	4.2	3.1	2.7	2.4	1.9	1.5	1.0
Appr. g/m	41.3	59.4	105.6	165.0	237.6	323.4	371.3	422.4	534.6	660.0	1031.3
Kgs/coil	5									10	

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PTFE Filament Packing

APEX4200 PTFE filament packing

Braided from sintered and highly stretched PTFE multifilament yarns with thorough PTFE impregnation. The packing is then re-impregnated with PTFE emulsion after braiding process.
With high cross-section density and structural strength, the packing has good resistance to compression and extrusion.

APEX4200SC PTFE filament packing with silicone rubber core

The high elastic silicone rubber core can absorb vibration and avoid leakage.

Applications:

They are universal packings, especially suitable for high pressure valves, plunger pumps, mixers, agitators and in the industries where contamination is not permitted, such as food industries, pharmaceutical factories, paper mills, chemical fiber plants, etc.

Service Limits:

Temperature		-150°C~+260°C
Pressure	Rotating	20bar
	Reciprocating	150bar
	Valve	250bar
Shaft speed		10m/s
PH range		0~14
Density (APEX4200)		1.55~1.75g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil; As packing rings (AP-PR4200, AP-PR4200SC).

Dimension Table:

For packings with density of 1.65g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	24.2	16.8	9.5	6.1	4.2	3.1	2.7	2.4	1.9	1.5	1.0
Appr. g/m	41.3	59.4	105.6	165.0	237.6	323.4	371.3	422.4	534.6	660.0	1031.3
Kgs/coil	5									10	

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Graphited PTFE Packing

APEX SEAL GPTFE yarn is a homogenous yarn developed from high quality PTFE resin and graphite powder through special process. It has low friction and good thermal conductivity, and is suitable for most chemical mediums.

APEX4300 Graphited PTFE packing

The packing is braided from APEX SEAL GPTFE yarns. Its consistently high thermal conductivity ensures an effective seal, especially at high temperature and speeds. There are no free graphite particles on the surface therefore little contamination would occur.

APEX4300L Graphited PTFE packing with lube oil

Braided from APEX SEALGPTFE yarns with silicone lubricant. It is an economical GPTFE packing.

APEX4301 SGPTFE packing

Braided from super grade GPTFE yarns, it is a good alternative to Gore GFO packing.

Applications:

Widely used in pumps, valves, reciprocating and rotating shafts, mixers and agitators. Especially designed for services involving surface speeds and temperature higher than those normally specified for pure PTFE packings.

Service Limits:

Style		**APEX4300, APEX4300L**	**APEX4301**
Temperature		-150°C~+280°C	
Pressure	Rotating	20bar	25bar
	Reciprocating	100bar	150bar
	Valve	150bar	200bar
Shaft speed		16m/s	20m/s
PH range		0~14	
Density		1.2~1.4g/cm^3	

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil;
As packing rings (AP-PR4300, AP-PR4300L, AP-PR4301).

Dimension Table:

For packings with density of 1.3g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	30.8	21.4	12.0	7.7	5.3	3.9	3.4	3.0	2.4	1.9	1.2
Appr. g/m	32.5	46.8	83.2	130.0	187.2	254.8	292.5	332.8	421.2	520.0	812.5
Kgs/coil	5									10	

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Glass Fiber Packing

Glass fiber is outstanding in different organic and inorganic fibers, and is an ideal replacement for asbestos materials. It has many excellent features, such as high strength, high temperature resistance, low density, low thermal conductivity, good insulation, non-flammable, and so on.

APEX6100 Glass fiber packing

Square braided from texturized glass fiber yarns without any impregnation. It will not shrink or swell when in service.

APEX6100G Graphited glass fiber packing

Square braided from texturized glass fiber yarns and then treated with graphite emulsion.

APEX6100P Glass fiber packing with PTFE

Square braided from glass fiber yarns pre-treated with PTFE emulsion. The packing is then re-impregnated with PTFE emulsion after braiding process. The PTFE impregnation increases the elasticity and sealing performance of the packing.

Applications:

As a static seal, APEX6100 is widely used for heat insulation and fire prevention in containers, heaters, manholes, lid covers and pipes. Suitable for use in chemically neutral mediums, such as water, steam, air, oils, etc.

Service Limits:

Style	APEX6100	APEX6100G	APEX6100P
Maximum temperature	450°C~550°C	450°C~550°C	280°C
PH range	5~9		
Density	0.9~1.1g/cm^3	1.1~1.3g/cm^3	1.1~1.3g/cm^3

Chemical incompatibilities: Hydrofluoric acid, hot phosphoric, acid and wet hydrogen chloride.

Normal Packing:

5kgs or 10kgs per roll, then 20kgs in a woven bag or carton.

Dimension Table:

For packings with density of 1.1g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	36.4	25.3	14.2	9.1	6.3	4.6	4.0	3.6	2.8	2.3	1.5
Appr. g/m	27.5	39.6	70.4	110.0	158.4	215.6	247.5	281.6	356.4	440.0	687.5
Kgs/coil	5									10	

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Glass Fiber Rope

Glass fiber is outstanding in different organic and inorganic fibers, and is an ideal replacement for asbestos materials. It has many excellent features, such as high strength, high temperature resistance, low density, low thermal conductivity, good insulation, non-flammable, and so on.

APEX6110 Round braided glass fiber rope

Round braided from texturized glass fiber yarns. It is a strong and stable rope.

APEX6120 Twisted glass fiber rope

Twisted from a number of texturized glass fiber yarns. It is a dry, flexible rope.

Applications:

Widely used as static seals for heat insulation and fire prevention in containers, heaters, manholes, lid covers, and pipes. Suitable for use in chemically neutral mediums, such as water, steam, air, oils, etc.

Service Limits:

Maximum temperature	450°C~550°C
PH range	5~9
Density (APEX6110)	0.9~1.1g/cm^3

Chemical incompatibilities: Hydrofluoric acid, hot phosphoric, acid and wet hydrogen chloride.

Normal Packing:

5kgs or 10kgs per roll, then 20kgs in a woven bag or carton.

Dimension Table:

For round braided packings with density of 1.0g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	51.0	35.3	19.9	12.7	8.8	6.5	5.7	5.0	3.9	3.2	2.0
Appr. g/m	19.6	28.3	50.3	78.5	113.1	153.9	176.7	201.1	254.5	314.2	490.9
Kgs/coil	5									10	

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Ceramic Fiber Packing

APEX6500 Ceramic fiber packing

Square braided from high quality ceramic fiber yarns which are manufactured mainly from alumina-silica materials. The packing has characteristics of high temperature stability, low thermal conductivity, low heat storage, excellent thermal shock resistance, light weight, and good corrosion resistance. It resists most corrosive agents except hydrofluoric acid, phosphoric acid, and hot concentrated alkalis.

APEX6500G Graphited ceramic fiber packing

Braided from high quality ceramic fiber yarns and then treated with graphite.

APEX6510 Round braided ceramic fiber packing

Round braided from high quality ceramic fiber yarns.

Available to be reinforced with metallic wire (such as stainless steel wire, nickel wire, etc.)
(style number: APEX6500R, APEX6500RG, APEX6510R).

Applications:

As static seal packings, widely used as thermal insulation and fire-proof material in vessels, heaters, manhole lids, etc. APEX6500G is normally used in valves as static seal under high temperature. Suitable for chemically neutral mediums such as water, steam, air, oils and so on.

Specifications:

Maximum temperature		1000°C
Density	APEX6500,APEX6510	0.5~0.7g/cm^3
	APEX6500G	0.6~0.8g/cm^3

Chemical incompatibilities: Soluble in hydrofluoric acid, phosphoric acid and concentrated alkali chloride.

Normal Packing:

5kgs or 10kgs per roll, then 20kgs in a woven bag or carton.

Dimension Table:

For square braided packings with density of 0.6g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	66.7	46.3	26.0	16.7	11.6	8.5	7.4	6.5	5.1	4.2	2.7
Appr. g/m	15.0	21.6	38.4	60.0	86.4	117.6	135.0	153.6	194.4	240.0	375.0
Kgs/coil	5									10	

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Aramid Fiber Packing

APEX7100 Aramid fiber packing

Braided from high quality aramid (Kevlar) yarns which are uniformly impregnated with PTFE dispersion. The packing shows good chemical resistance, high elasticity and very low cold flow. It is wear resistant but may damage the shaft if not used properly. A minimum shaft hardness of 60HRC is therefore recommended. Compared with other kinds of packing, it can resist severer media and higher pressure.

APEX7100L Aramid fiber packing with lubricant

Braided from high quality Dupont aramid (Kevlar) yarns which are uniformly impregnated with PTFE dispersion and lubricated with a silicone-based compound.

APEX7200 Spun aramid fiber packing

Braided from economical aramid yarns which are spun from short aramid (Kevlar) fibers and other selected fibers, and impregnated with PTFE. APEX7200 is with similar characteristics as APEX7100, but less harmful to the shaft.

Applications:

They are durable packings able to withstand granular and abrasive mediums. Can be used in pumps in all types of industries such as chemical, petrochemical, pharmaceutical, food and sugar industries, pulp and paper mills, power stations, etc.

Recommended for serving in superheated steam, solvents, liquefied gases, sugar syrups and other abrasive fluids.

Can be used as stand-alone packing or as anti-extrusion ring in combination with other packing rings.

Service Limits:

Style		**APEX7100**	**APEX7100L**	**APEX7200**
Temperature		-100°C~+260°C		
Pressure	Rotating	25bar, 25m/s		25bar, 20m/s
	Reciprocating	100bar, 1.5m/s		80bar, 1.5m/s
	Valve	200bar		180bar
PH range		2~12		
Density		1.25~1.45g/cm^3	1.35~1.55g/cm^3	1.25~1.45g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil;

As packing rings (AP-PR7100, AP-PR7100L, AP-PR7200).

Dimension Table:

For packings with density of 1.35g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	29.6	20.6	11.6	7.4	5.1	3.8	3.3	2.9	2.3	1.9	1.2
Appr. g/m	33.8	48.6	86.4	135.0	194.4	264.6	303.8	345.6	437.4	540.0	843.8
Kgs/coil	5									10	

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PTFE + Aramid Packing

APEX7140 White PTFE packing with aramid corners

The corners of the packing are made from aramid (Kevlar) yarns impregnated with PTFE, while the friction faces are made from pure PTFE yarns. This structure enhances the lubrication ability of aramid fiber and improves the strength of the pure PTFE.

APEX7150 White PTFE & aramid zebra-braided packing

It is a multi-yarn packing zebra-braided from pure PTFE yarns and aramid (Kevlar) yarns.

Applications:

Designed for high-pressure reciprocating pumps, medium-speed centrifugal pumps and valves. Can be used for general service vapors, gases, solvents, mild acids, alkalis and most abrasive liquids.
The packings do not cause stain in pulp & paper mills, pharmaceutical, food and sugar industries.

Service Limits:

Temperature		-100°C~+260°C
Pressure	Rotating	20bar
	Reciprocating	100bar
	Valve	180bar
Shaft speed		12m/s
PH range		2~12
Density		1.45~1.65g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil; As packing rings (AP-PR7140, AP-PR7150).

Dimension Table:

For packings with density of 1.55g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	25.8	17.9	10.1	6.5	4.5	3.3	2.9	2.5	2.0	1.6	1.0
Appr. g/m	38.8	55.8	99.2	155.0	223.2	303.8	348.8	396.8	502.2	620.0	968.8
Kgs/coil	5									10	

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GPTFE + Aramid Packing

APEX7143 Graphited PTFE packing with aramid corners

The packing is braided from graphited PTFE yarns and enhanced with aramid (Kevlar) yarns on the corners. Compared with APEX7140, it has better lubricity and thermal conductivity, and wider applications in high pressure working environments.

APEX7153 Graphited PTFE & aramid zebra-braided packing

It is a multi-yarn packing zebra-braided from graphited PTFE yarns and aramid (Kevlar) yarns. Compared with APEX7150, it has better lubricity and thermal conductivity.

Applications:

The packings feature the strength of aramid fibers, and the low friction and good thermal conductivity of graphited PTFE. Widely used in reciprocating pumps, mixers, agitated reactors and valves in petrochemical, paper and sugar industries, power stations, etc.

Service Limits:

Temperature		-150°C~+260°C
Pressure	Rotating	25bar
	Reciprocating	150bar
	Valve	200bar
Shaft speed		15m/s
PH range		2~12
Density		1.45~1.65g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil; As packing rings (AP-PR7143, AP-PR7153).

Dimension Table:

For packings with density of 1.55g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	25.8	17.9	10.1	6.5	4.5	3.3	2.9	2.5	2.0	1.6	1.0
Appr. g/m	38.8	55.8	99.2	155.0	223.2	303.8	348.8	396.8	502.2	620.0	968.8
Kgs/coil	5									10	

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Nomex Fiber Packing

APEX7300 Nomex fiber packing

Braided from high quality spun Nomex yarns which are uniformly impregnated with PTFE dispersion. It has high cross-section density and structural strength.

APEX7300L Nomex fiber packing with lubricant

Braided from high quality spun Nomex yarns which are uniformly impregnated with PTFE dispersion and lubricated with a silicone-based compound.
It does not hurt shaft, and is ideal for food industries.

APEX7300SC Nomex fiber packing with silicone rubber core

The high elastic silicone rubber core can absorb vibration and avoid leakage.

Applications:

They are universal, clean, and wear-resistant packings designed for pumps, agitators, mixers, kneaders and refiners, in industrial sectors such as pulp and paper, sugar production, breweries, sewage systems, water conditioning for power stations.
APEX7300SC is especially designed for machines with severe vibration.

Service Limits:

Temperature		-50°C~+260°C
Pressure Shaft speed	Rotating	25bar, 25m/s
	Reciprocating	50bar, 2m/s
	Valve	100bar, 2m/s
PH range		1~13
Density (APEX7300)		1.2~1.4g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil;
As pre-pressed rings (AP-PR7300, AP-PR7300SC).

Dimension Table:

For packings with density of 1.3g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	30.8	21.4	12.0	7.7	5.3	3.9	3.4	3.0	2.4	1.9	1.2
Appr. g/m	32.5	46.8	83.2	130.0	187.2	254.8	292.5	332.8	421.2	520.0	812.5
Kgs/coil	5									10	

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Ramie Fiber Packing

APEX7400 Ramie fiber packing

Braided from high quality ramie fibers impregnated with PTFE. The packing is then thoroughly impregnated again in special PTFE dispersion. It does not stain the mediums and is not harsh to shafts and stems.

APEX7400L Ramie fiber packing with lube oil

It is similar with APEX7400, but impregnated with lubricant and contains less PTFE.

APEX7400SC Ramie fiber packing with silicone rubber core

The high elastic silicone rubber core can absorb vibration and avoid leakage.

Applications:

Widely used in pumps, refiners, filters and valves in the brewing, beverage, and shipbuilding industries. Especially for use in abrasive mediums in paper mills.

Service Limits:

Temperature		-50°C~+130°C
Pressure	Rotating	20bar
	Reciprocating	60bar
	Valve	100bar
Shaft speed		10m/s
PH range		5~11
Density	APEX7400	1.1~1.3g/cm^3
	APEX7400L	1.35~1.55g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil;
As packing rings (AP-PR7400,AP-PR7400L, AP-PR7400SC).

Dimension Table:

For packings with density of 1.2g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	33.3	23.1	13.0	8.3	5.8	4.3	3.7	3.3	2.6	2.1	1.3
Appr. g/m	30.0	43.2	76.8	120.0	172.8	235.2	270.0	307.2	388.8	480.0	750.0
Kgs/coil	5									10	

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Graphited Ramie Packing

APEX7400G Graphited ramie fiber packing

Braided from high quality ramie fibers and adequately impregnated with graphite and lubricant oil. It has outstanding characteristics of very low friction and good corrosion resistance.

Applications:

Low frictional applications where minimum shaft wear is essential. It is also ideal for marine use, handling cold water, brine and cold oils.

Service Limits:

Temperature		-50°C~+130°C
Pressure	Rotating	20bar
	Reciprocating	60bar
	Valve	100bar
Shaft speed		12m/s
PH range		5~11
Density		1.2~1.4g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil; As packing rings (AP-PR7400G).

Dimension Table:

For packings with density of 1.3g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	30.8	21.4	12.0	7.7	5.3	3.9	3.4	3.0	2.4	1.9	1.2
Appr. g/m	32.5	46.8	83.2	130.0	187.2	254.8	292.5	332.8	421.2	520.0	812.5
Kgs/coil	5									10	

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Cotton Fiber Packing

APEX7500 Cotton fiber packing with grease

Braided from cotton fiber yarns and impregnated with yellow grease (style number: **APEX7500Y**) or white grease (style number: **APEX7500W**). The packing is flexible and resilient, easy to handle.

APEX7500G Graphited cotton fiber packing

Braided from cotton fiber yarns and treated with graphite.

APEX7500P Cotton packing with PTFE

Braided from cotton fiber yarns and impregnated with PTFE emulsion. It is designed for hydraulic applications in low and medium pressure pumps and valves, and where contamination is not permitted.

Applications:

They are economical universal packings for the applications in stated limits. Suitable for rotating and reciprocating pumps, valves, agitators with mediums of water, seawater, alcohol, grease, etc.

Service Limits:

Style		**APEX7500**	**APEX7500G**	**APEX7500P**
Maximum temperature		100°C	130°C	130°C
Pressure	Rotating	10bar	10bar	10bar
	Reciprocating	20bar	20bar	20bar
	Valve	60bar	70bar	70bar
Shaft speed		8m/s	10m/s	10m/s
PH range		6~8	6~8	4~10
Density		1.1~1.3g/cm^3	1.1~1.3g/cm^3	0.9~1.1 g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil;
As packing rings (AP-PR7500, AP-PR7500G,AP-PR7500P).

Dimension Table:

For packings with density of 1.2g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	33.3	23.1	13.0	8.3	5.8	4.3	3.7	3.3	2.6	2.1	1.3
Appr. g/m	30.0	43.2	76.8	120.0	172.8	235.2	270.0	307.2	388.8	480.0	750.0
Kgs/coil	5									10	

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Acrylic Fiber Packing

APEX7600 Acrylic fiber packing

Braided from high strength acrylic synthetic fiber yarns pre-impregnated with PTFE. The packing is then thoroughly impregnated again in special PTFE dispersion. It has good tightness, lubricity and chemical resistance.

APEX7600L Acrylic fiber packing with lube oil

It is similar with APEX7600, but impregnated with lubricant and contains less PTFE.

APEX7600SC Acrylic fiber packing with silicone rubber core

The high elastic silicone rubber core can absorb vibration and avoid leakage.

Applications:

They are excellent multi-service packings for a variety of uses in pumps and valves throughout a plant. They can handle most chemicals except strong acid, strong alkali and strong oxidizer, especially suitable for the applications of middle temperature, high pressure, high speed, and where contamination is not permitted.

Service Limits:

Temperature		-50°C~+250°C
Pressure	Rotating	20bar
	Reciprocating	80bar
	Valve	100bar
Shaft speed		12m/s
PH range		0~12
Density (APEX7600,APEX7600L)		1.1~1.3g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil;
As packing rings (AP-PR7600, AP-PR7600L, AP-PR7600SC).

Dimension Table:

For packings with density of 1.2g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	33.3	23.1	13.0	8.3	5.8	4.3	3.7	3.3	2.6	2.1	1.3
Appr. g/m	30.0	43.2	76.8	120.0	172.8	235.2	270.0	307.2	388.8	480.0	750.0
Kgs/coil	5									10	

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Graphited Acrylic Packing

APEX7600G Graphited acrylic fiber packing

Braided from high strength acrylic synthetic fiber yarns and treated with graphite. The graphite filler increases the service temperature of the packing.

Applications:

It is a universal packing for pumps and valves. Suitable for most mediums like water, air, steam, mild acids and alkalis, all kinds of organic solvents and chemicals. Especially suitable for high temperature, high pressure, medium speed conditions.

Service Limits:

Temperature		-50°C~+250°C
Pressure	Rotating	20bar
	Reciprocating	80bar
	Valve	120bar
Shaft speed		15m/s
PH range		0~12
Density		1.1~1.3g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil;
As packing rings (AP-PR7600G).

Dimension Table:

For packings with density of 1.2g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	33.3	23.1	13.0	8.3	5.8	4.3	3.7	3.3	2.6	2.1	1.3
Appr. g/m	30.0	43.2	76.8	120.0	172.8	235.2	270.0	307.2	388.8	480.0	750.0
Kgs/coil	5									10	

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Kynol Fiber Packing

APEX7700 Kynol fiber packing

Braided from high performance Kynol (also named novoloid or phenolic) fiber yarns impregnated with special PTFE dispersions. It has good mechanical properties combined with softness and strength. Compared to ordinary aramid and PTFE packing, it has many advantages such as: good thermal stability, low heat expansion; high dimensional stability and superior pressure resistance even at elevated temperature; high strength whilst gentle to shafts; easy to cut and install; outstanding chemical resistance especially to acids, organic solvents, oils and fuels.

APEX7740 White PTFE packing with Kynol corners

Braided from pure PTFE yarns and enhanced with Kynol fiber yarns on the corners. It contains the advantages of both PTFE and Kynol.

Applications:

APEX7700 is a high performance packing that is well suited to abrasive mediums and applications where contamination is not permitted. It has multiple uses in chemical plants and pulp & paper mills, regularly used in rotating and reciprocating pumps, washer journals, liquor pumps, refiners and digesters.

Service Limits:

Temperature		-100°C~+260°C
Pressure Shaft speed	Rotating	20bar, 20m/s
	Reciprocating	100bar, 1.5m/s
	Valve	200bar, 2m/s
PH range		1~13
Density	APEX7700	1.2~1.4g/cm^3
	APEX7740	1.1~1.3g/cm^3

Forms of Supply:

In coils, e.g. 5kgs or 10kgs per coil; As packing rings (AP-PR7700, AP-PR7740).

Dimension Table:

For packings with density of 1.3g/cm^3

Size (mm)	5	6	8	10	12	14	15	16	18	20	25
Appr. m/kg	30.8	21.4	12.0	7.7	5.3	3.9	3.4	3.0	2.4	1.9	1.2
Appr. g/m	32.5	46.8	83.2	130.0	187.2	254.8	292.5	332.8	421.2	520.0	812.5
Kgs/coil	5									10	

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Note:

1. All technical details quoted throughout this catalogue are based on our extensive tests and years of experience, however, they can only serve as guide values. Your specific application should not be undertaken without independent study and evaluation for suitability. Failure to select proper products and specifications could result in property damage and/or personal injury.
2. Technical details subject to change without notice. This edition cancels all previous issues.

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