

ADVANCE PRODUCTS & SYSTEMS, INC.

Specifications and Certificate of Compliance for the:
APS FUSION COATED STEEL BAND CASING SPACER
MODEL S18

The Advance Model S18 Casing Spacers shall be constructed of circular carbon steel bands, which bolt together forming a shell around the carrier pipe. The spacers shall be designed with risers (when engineering deems necessary) and runners to support the carrier within the casing and maintain a minimum clearance of 1.00" between the casing ID and the spacer OD. On carrier pipes with a nominal OD of 16" or less, each spacer shall contain four riser and runner combinations - two on each half. On carrier pipes with a nominal OD of 18" through 24", each spacer shall contain either four riser and runner combinations – two on each half, or each spacer shall contain five riser and runner combinations – two on the top half and three on the bottom half. This is dependant on the annular space between the carrier pipe OD and casing pipe ID and shall be left up to the discretion of the APS engineering department. On carrier pipes with a nominal OD above 24", APS engineering department reserves the right to submit a casing spacer design best suited for the application. Plated steel bolts, nuts and washers shall be supplied with the casing spacers.

The band shall be manufactured of 8" wide, hot rolled, pickled, and oiled 14-gauge carbon steel. The risers (when applicable) shall be constructed of hot rolled, pickled, and oiled 10-gauge carbon steel having a minimum length of 6" and a height to be determined based on the annular space between the carrier OD and the casing ID.

Abrasion resistant runners, having a minimum length of 7" and a minimum width of 1", shall be attached to each band and/or riser (depending on design criteria) to minimize friction between the casing pipe and the carrier pipe as it is installed. Runner material shall be of glass filled polymer with a compression strength of 33,000 psi, flexural strength of 40,000 psi and tensile strength of 27,000 psi. The ends of all runners shall be beveled to facilitate installation over rough weld beads or the welded ends of misaligned or deformed casing pipe.

Interior surfaces of the circular carbon steel band shall be lined with EPDM, or PVC alternate, having a minimum thickness of .090" with a hardness of Durometer "A" 85-90.

Recommended positioning of the spacers is one placed 1 – 2 feet on each side of the bell joint and one placed every 7 - 9 feet apart thereafter. For special applications or positioning options, please consult factory.

Advance Products & Systems, Inc. certifies that the Model S18 steel casing spacers are of the highest quality and meet or exceed industry standards.

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ADVANCE PRODUCTS & SYSTEMS, INC.

Specifications and Certificate of Compliance for the:
APS FUSION COATED STEEL BAND CASING SPACER
MODEL SI8

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Physical Properties

BAND and RISERS

Band – 14-Gauge, hot rolled, pickled & oiled Steel

Riser – 10-Gauge, hot rolled, pickled & oiled Steel

LINER - EDPM (Polyvinyl Chloride Alternate)

Thickness - .090" (2.29mm) minimum

Hardness - Durometer "A" 85-90

Dielectric Strength - {1/8" (3.18 mm) thick} 60,000 VPM

Water Absorption - 1% maximum

Overlaps edges

BOLTS, NUTS and WASHERS

Up to nominal OD of 16" - Electro Plated – 1/4" – 20UNC x 2" long bolts

1/4" hex nuts

1/4" washers SAE 2330

Above nominal OD of 16" - Electro Plated – 5/16" – 18UNC x 2" long bolts

5/16" hex nuts

5/16" washers SAE 2330

RUNNERS

1" wide or 2" wide glass filled polymer

Sizes Available:

Length - 7" (17.8 cm)

Effective heights – 1", 1 1/2"

Material Specifications:

Rockwell Hardness (M) – (ASTM D 785) = 100

Tensile Strength – (ASTM D 638) = 27,000 psi

Flexural Strength – (ASTM D 790) = 40,000 psi

Compression Strength – (ASTM D 695) = 33,000 psi

Deflection Temperature @ 264 psi – (ASTM D 648) = 478°F (248°C)

Deformation Under Load @ 122°F (50°C) (4000 lb. Load) – (ASTM D 648) = 1.2%

Coefficient of friction – 0.1

FINISH

Copolymer-based Thermoplastic Specifications

Adhesion – (ASTM D 4541) = >800 psi

Durometer - Shore D (ASTM D 2240) = 53

Maximum Operating Temperature (Constant) = 150°F (65°C)

WELDING

All risers shall be welded to the band by MIG welding.

ADVANCE PRODUCTS & SYSTEMS, INC.

Specifications and Certificate of Compliance for the:
APS FUSION COATED STEEL BAND CASING SPACER
MODEL SIM

The Advance Model SIM Casing Spacers shall be constructed of circular carbon steel bands, which bolt together forming a shell around the carrier pipe. The spacers shall be designed with runners to support the carrier within the casing and maintain a minimum clearance of 1.00" between the casing ID and the spacer OD. Designed for carrier pipes up to 24" nominal size, each spacer shall contain four modular runners - two on each half. On carrier pipes with a nominal OD above 24", APS engineering department reserves the right to submit a casing spacer design best suited for the application. Plated steel bolts, nuts and washers shall be supplied with the casing spacers.

The band shall be manufactured of 8" wide, hot rolled, pickled, and oiled 14-gauge carbon steel.

Abrasion resistant runners, having a minimum length of 7" and a minimum width of 2", shall be attached to each band and/or riser (depending on design criteria) to minimize friction between the casing pipe and the carrier pipe as it is installed. Runner material shall be of glass filled polymer with a compression strength of 33,000 psi, flexural strength of 40,000 psi and tensile strength of 27,000 psi. The ends of all runners shall be beveled to facilitate installation over rough weld beads or the welded ends of misaligned or deformed casing pipe.

Interior surfaces of the circular carbon steel band shall be lined with EPDM, or PVC alternate, having a minimum thickness of .090" with a hardness of Durometer "A" 85-90.

Recommended positioning of the spacers is one placed 1 – 2 feet on each side of the bell joint and one placed every 7 - 9 feet apart thereafter. For special applications or positioning options, please consult factory.

Advance Products & Systems, Inc. certifies that the Model SIM steel casing spacers are of the highest quality and meet or exceed industry standards.

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ADVANCE PRODUCTS & SYSTEMS, INC.

Specifications and Certificate of Compliance for the:
APS FUSION COATED STEEL BAND CASING SPACER
MODEL SIM

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Physical Properties

BAND and RISERS

Band – 14-Gauge, hot rolled, pickled & oiled Steel

LINER - EDPM (Polyvinyl Chloride Alternate)

Thickness - .090" (2.29mm) minimum

Hardness - Durometer "A" 85-90

Dielectric Strength - {1/8" (3.18 mm) thick} 60,000 VPM

Water Absorption - 1% maximum

Overlaps edges

BOLTS, NUTS and WASHERS

Up to nominal OD of 16" - Electro Plated – 1/4" – 20UNC x 2" long bolts

1/4" hex nuts

1/4" washers SAE 2330

Above nominal OD of 16" - Electro Plated – 5/16" – 18UNC x 2" long bolts

5/16" hex nuts

5/16" washers SAE 2330

RUNNERS

2" wide glass filled polymer

Sizes Available:

Length - 7" (17.8 cm)

Effective heights – 2", 2 1/2", 3", 3 1/2", 4", 4 1/2", 5", 5 1/2", 6"

Material Specifications:

Rockwell Hardness (M) – (ASTM D 785) = 100

Tensile Strength – (ASTM D 638) = 27,000 psi

Flexural Strength – (ASTM D 790) = 40,000 psi

Compression Strength – (ASTM D 695) = 33,000 psi

Deflection Temperature @ 264 psi – (ASTM D 648) = 478°F (248°C)

Deformation Under Load @ 122°F (50°C) (4000 lb. Load) – (ASTM D 648) = 1.2%

Coefficient of friction – 0.1

FINISH

Copolymer-based Thermoplastic Specifications

Adhesion – (ASTM D 4541) = >800 psi

Durometer - Shore D (ASTM D 2240) = 53

Maximum Operating Temperature (Constant) = 150°F (65°C)

ADVANCE PRODUCTS & SYSTEMS, INC.

Specifications and Certificate of Compliance for the:
APS FUSION COATED STEEL BAND CASING SPACER
MODEL SI12

The Advance Model SI12 Casing Spacers shall be constructed of circular carbon steel bands, which bolt together forming a shell around the carrier pipe. The spacers shall be designed with risers (when engineering deems necessary) and runners to support the carrier within the casing and maintain a minimum clearance of 1.00" between the casing ID and the spacer OD. On carrier pipes with a nominal OD of 15" or less, each spacer shall contain four riser and runner combinations - two on each half. On carrier pipes with a nominal OD of 16" through 36", each spacer shall contain five riser and runner combinations – two on the top half and three on the bottom half depending on the annular space between the carrier pipe OD and casing pipe ID and the type of carrier pipe. On carrier pipes with a nominal OD above 36", APS engineering department reserves the right to submit a casing spacer design best suited for the application. Plated steel bolts, nuts and washers shall be supplied with the casing spacers.

The band shall be manufactured of 12" wide, hot rolled, pickled, and oiled 14-gauge carbon steel. The risers (when applicable) shall be constructed of hot rolled, pickled, and oiled 10-gauge carbon steel having a minimum length of 10" and a height to be determined based on the annular space between the carrier OD and the casing ID.

Abrasion resistant runners, having a minimum length of 11" and a minimum width of 2", shall be attached to each band and/or riser (depending on design criteria) to minimize friction between the casing pipe and the carrier pipe as it is installed. Runner material shall be of glass filled polymer with a compression strength of 33,000 psi, flexural strength of 40,000 psi and tensile strength of 27,000 psi. The ends of all runners shall be beveled to facilitate installation over rough weld beads or the welded ends of misaligned or deformed casing pipe.

Interior surfaces of the circular carbon steel band shall be lined with EPDM, or PVC alternate, having a minimum thickness of .090" with a hardness of Durometer "A" 85-90.

Recommended positioning of the spacers is one placed 1 – 2 feet on each side of the bell joint and one placed every 6 - 8 feet apart thereafter. For special applications or positioning options, please consult factory.

Advance Products & Systems, Inc. certifies that the Model SI12 steel casing spacers are of the highest quality and meet or exceed industry standards.

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ADVANCE PRODUCTS & SYSTEMS, INC.

Specifications and Certificate of Compliance for the:
APS FUSION COATED STEEL BAND CASING SPACER
MODEL SI12

Page 2

Physical Properties

BAND and RISERS

Band – 14-Gauge, hot rolled, pickled & oiled Steel

Riser – 10-Gauge, hot rolled, pickled & oiled Steel

LINER - EDPM (Polyvinyl Chloride Alternate)

Thickness - .090" (2.29mm) minimum

Hardness - Durometer "A" 85-90

Dielectric Strength - {1/8" (3.18 mm) thick} 60,000 VPM

Water Absorption - 1% maximum

Overlaps edges

BOLTS, NUTS and WASHERS

Up to nominal OD of 16" - Electro Plated – 1/4" – 20UNC x 2" long bolts

1/4" hex nuts

1/4" washers SAE 2330

Above nominal OD of 16" - Electro Plated – 5/16" – 18UNC x 2" long bolts

5/16" hex nuts

5/16" washers SAE 2330

RUNNERS

2" wide glass filled polymer

Sizes Available:

Length - 11" (27.94 cm)

Effective heights for all nominal OD pipes – 1" and 1 1/2"

Material Specifications:

Rockwell Hardness (M) – (ASTM D 785) = 100

Tensile Strength – (ASTM D 638) = 27,000 psi

Flexural Strength – (ASTM D 790) = 40,000 psi

Compression Strength – (ASTM D 695) = 33,000 psi

Deflection Temperature @ 264 psi – (ASTM D 648) = 478°F (248°C)

Deformation Under Load @ 122°F (50°C) (4000 lb. Load) – (ASTM D 648) = 1.2%

Coefficient of friction – 0.1

FINISH

Copolymer-based Thermoplastic Specifications

Adhesion – (ASTM D 4541) = >800 psi

Durometer - Shore D (ASTM D 2240) = 53

Maximum Operating Temperature (Constant) = 150°F (65°C)

WELDING

All risers shall be welded to the band by MIG welding.