

ADVANCE PRODUCTS & SYSTEMS, INC.

Specifications and Certificate of Compliance for the:

APS STANDARD MODEL AW CASING END SEAL

The Advance Standard Model AW Wraparound casing end seal is manufactured of 1/8" thick neoprene rubber, assuring excellent chemical resistance and resiliency. Also included are 1/2" wide T304 stainless steel bandings with 100% non-magnetic worm gear mechanism.

The Model AW casing end seal has butyl mastic strips to seal edges, and is designed to facilitate installation when the carrier line has already been joined together and the installation is complete. Each model of end seal is made of 60 durometer synthetic rubber.

Advance Products & Systems, Inc. certifies that the Standard Model AW Wraparound casing end seals are of the highest quality and meet or exceed industry standards.

Physical Properties

Temperature Limits	-20°F to +212°F
Color	Black
Finish	Smooth
Durometer	60 +/-5
Average Tensile	1000 PSI
Average Elongation	350%
Specific Gravity	1.50
Polymer Content	20%

ADVANCE PRODUCTS & SYSTEMS, INC.

Specifications and Certificate of Compliance for the:

APS MODEL AWN WRAPAROUND HIGH-TEMPERATURE CASING END SEAL

The Advance Products & Systems, Inc. Model AWN Wraparound high-temperature casing end seal is manufactured of 1/8" thick neoprene rubber, assuring excellent chemical resistance and resiliency. These end seals can be effectively used in the temperature range of -20°F to 250°F, intermittently to 275°F. They are secured with stainless steel banding with 100% non-magnetic worm gear mechanism.

Advance Products & Systems, Inc. casing end seals are of the highest quality and are manufactured to industry standards.

The APS Model AWN casing end seal is specifically designed to conform to eccentric carrier/casing configuration. The Model AWN is manufactured of 1/8" thick, 70 durometer Buna Nitrile and vulcanized to provide many years of trouble free service.

Two 304L stainless steel worm gear clamps are provided with each seal requiring only a screwdriver for installation. Nitrile is a copolymer of butadiene and acrylonitrile. Excellent resistance to most petroleum oils and greases, gasoline, alcohols, L-P gases, fuel oils, and many other fluids. It has good tensile strength (2500 PSI minimum) and abrasion resistance. Used where Neoprene compounds tend to swell or where temperatures higher than 275°F are encountered in conjunction with oils or solvents. Temperature to 300°F.

Advance Products & Systems, Inc. certifies that the Standard Model AWN Wraparound casing end seals are of the highest quality and meet or exceed industry standards.

Physical Properties

Nitrile

	<u>Soft</u>	<u>Medium</u>
Specification ASTM D-1056-67	SBE 41	SBE 42
ASTM D-1056-68	SBE 41	SBE 42
ASTM D-1056-73	RE 41 E2	RE 42 E2
MIL-C 3133, milSTD 670-B	SBE - 3F2	SBE - 7F2
25% Compression Deflection	2 - 5	5 - 9
Shore 00 Durometer (Approximate)	30 - 45	45 - 55
Density (Approximate p.c.f.)	12 - 16	12 - 16
Water Absorption by Weight	5%	5%
Temperature Range	67 - 200 °F	67 - 200 °F
Weather Resistance	Good	Good
Linear Shrinkage (maximum) 7 days at 158 °F	5%	5%
Fuel B Resistance (maximum weight)	50%	50%
Tensile Strength	70	80
Elongation (minimum)	200%	180%

ADVANCE PRODUCTS & SYSTEMS, INC.

Specifications and Certificate of Compliance for the:
APS STANDARD MODEL AC CASING END SEAL

The Advance Standard Model AC Pull-On casing end seals are manufactured of 1/8” thick neoprene rubber, assuring excellent chemical resistance and resiliency. Also included are 1/2” wide T304 stainless steel bandings with 100% non-magnetic worm gear mechanism.

The APS Model AC casing end seal is seamless, has vulcanized edges, and can be pulled on at the time of construction. Each model of end seal is made of 60 durometer synthetic rubber.

Advance Products & Systems, Inc. certifies that the Standard Model AC Pull-On casing end seals are of the highest quality and meet or exceed industry standards.

Physical Properties

Temperature Limits	-20°F to +212°F
Color	Black
Finish	Smooth
Durometer	60 +/-5
Average Tensile	1000 PSI
Average Elongation	350%
Specific Gravity	1.50
Polymer Content	20%

ADVANCE PRODUCTS & SYSTEMS, INC.

Specifications and Certificate of Compliance for the:

APS MODEL ACN PULL-ON HIGH-TEMPERATURE CASING END SEAL

The Advance Model ACN Pull-On high-temperature casing end seal is manufactured of 1/8" thick neoprene rubber, assuring excellent chemical resistance and resiliency. These end seals can be effectively used in the temperature range of -20°F to 250°F, intermittently to 275°F. They are secured with stainless steel banding with 100% non-magnetic worm gear mechanism.

The APS Model ACN casing end seal is specifically designed to conform to eccentric carrier/casing configuration. The Model ACN is manufactured of 1/8" thick, 70 durometer Buna Nitrile and vulcanized to provide many years of trouble free service.

Two 304L stainless steel worm gear clamps are provided with each seal requiring only a screwdriver for installation. Nitrile is a copolymer of butadiene and acrylonitrile. Excellent resistance to most petroleum oils and greases, gasoline, alcohols, L-P gases, fuel oils, and many other fluids. It has good tensile strength (2500 PSI minimum) and abrasion resistance. Used where Neoprene compounds tend to swell or where temperatures higher than 275°F are encountered in conjunction with oils or solvents. Temperature to 300°F.

Advance Products & Systems, Inc. certifies that the Model ACN Pull-On casing end seals are of the highest quality and meet or exceed industry standards.

Physical Properties

Nitrile

	<u>Soft</u>	<u>Medium</u>
Specification ASTM D-1056-67	SBE 41	SBE 42
ASTM D-1056-68	SBE 41	SBE 42
ASTM D-1056-73	RE 41 E2	RE 42 E2
MIL-C 3133, milSTD 670-B	SBE - 3F2	SBE - 7F2
25% Compression Deflection	2 - 5	5 - 9
Shore 00 Durometer (Approximate)	30 - 45	45 - 55
Density (Approximate p.c.f.)	12 - 16	12 - 16
Water Absorption by Weight	5%	5%
Temperature Range	67 - 200°F	67 - 200°F
Weather Resistance	Good	Good
Linear Shrinkage (maximum) 7 days at 158°F	5%	5%
Fuel B Resistance (maximum weight)	50%	50%
Tensile Strength	70	80
Elongation (minimum)	200%	180%

ADVANCE PRODUCTS & SYSTEMS, INC.

Specifications and Certificate of Compliance for the: **APS STANDARD MODEL AZP CASING END SEAL**

The Advance Standard Model AZP Zipper casing end seal is manufactured of 1/8" thick neoprene rubber, assuring excellent chemical resistance and resiliency. Also included are 1/2" wide T304 stainless steel bandings with 100% non-magnetic worm gear mechanism.

The Model AZP casing end seal has plastic zipper to seal edges, and is designed to facilitate installation when the carrier line has already been joined together and the installation is complete. Each model of end seal is made of 60 durometer synthetic rubber.

Advance Products & Systems, Inc. certifies that the Standard Model AZP Zipper casing end seals are of the highest quality and meet or exceed industry standards.

Physical Properties

Temperature Limits	-20°F to +212°F
Color	Black
Finish	Smooth
Durometer	60 +/-5
Average Tensile	1000 PSI
Average Elongation	350%
Specific Gravity	1.50
Polymer Content	20%

Physical Properties of Zipper

Temperature Limits	-20°F to +215°F
Color	Black
Weak Acids	Resistant
Alkali	Resistant
Solvents	Resistant
Cord	Polyester
Teeth	Acetal

ADVANCE PRODUCTS & SYSTEMS, INC.

Specifications and Certificate of Compliance for the:
APS STANDARD MODEL AM CASING END SEAL

The Advance Standard Model AM molded casing end seal is manufactured of 3/8" thick SBR rubber, assuring excellent chemical resistance and resiliency. Also included are 1/2" wide T304 stainless steel bandings with 100% non-magnetic worm gear mechanism.

The Model AM casing end seal is designed to permit movement of the carrier pipe without damage to the seal and prevents damage from backfill. Each model of end seal is made of 60 durometer synthetic rubber.

Advance Products & Systems, Inc. certifies that the Standard Model AM molded casing end seals are of the highest quality and meet or exceed industry standards.

Physical Properties

Temperature Limits	-20°F to +212°F
Color	Black
Finish	Smooth
Durometer	60 +/-5
Average Tensile	1000 PSI
Average Elongation	350%
Specific Gravity	1.50
Polymer Content	20%