

PENBERTHY

application report

For: LOW TEMPERATURE SIGHT FLOW INDICATORS & SIGHT WINDOWS MATERIAL SELECTION

Some materials, particularly ferritic steels, change from tough to brittle behavior with a decrease in temperature. The transition temperatures and the levels of notch toughness vary with different materials. When materials are used under conditions where brittle behavior may occur, there is a danger that minor internal flaws, which would be considered non-hazardous if the material were tough, may propagate to failure (see ASTM A352 supplements for more information).

Sight Flow Indicators

Temperature Range	Series	Suggested Materials						
		Body	Cover	Stud/Screw	Nut	Flapper	Pin	Drip Tube
to -20° F (-29° C)	All	ASTM A216 Gr WCB Carbon Steel	ASTM A36 Carbon Steel Plate	ASTM A449 or ASTM 193 Gr. B7 Steel	ASTM A563 Gr. A or ASTM A194 Gr. 2 or 2H Steel	ASTM A351 Gr. CF3M 316/316L STS	ASTM A276 316/316L STS	ASTM A269 316 STS (tubing)
to -50° F (-46° C)	All	ASTM A352 Gr. LCB Carbon Steel	ASTM A516 Gr. 70 / S5 - 50° F Steel Plate	ASTM 320 Gr. L7 Steel	ASTM A194 Gr. 8M 316 STS	ASTM A351 Gr. CF3M 316/316L STS	ASTM A276 316/316L STS	ASTM A269 316 STS (tubing)
to -325° F (-198° C)	All	ASTM A351 Gr. CF3M 316/316L STS	ASTM A240 316 STS Plate	ASTM A193 GR. B8M 316 STS	ASTM A194 GR. 8M 316 STS	ASTM A351 Gr. CF3M 316/316L STS	ASTM A276 316/316L STS	ASTM A269 316 STS (tubing)

Sight Windows

Temperature Range	Series	Suggested Materials			
		Body	Cover	Stud/Screw	Nut
to -20° F (-29° C)	All	ASTM A515 Gr. 70 or ASTM A105 Carbon Steel	ASTM A36 Carbon Steel Plate	ASTM A449 or ASTM 193 Gr. B7 Steel	ASTM A194 Gr. 2 or 2H Steel
to -50° F (-46° C)	All	ASTM A516 Gr. 70/ S5 - 50° F or ASTM A350 Gr. LF2 Cl. 1 Carbon Steel	ASTM A516 Gr. 70/ S5 - 50° F or ASTM A350 Gr. LF2 Cl. 1 Carbon Steel	ASTM A320 Gr. L7 Steel	ASTM A194 Gr. 8M 316 STS
to -325° F (-198° C)	All	ASTM A240 316 STS or ASTM A182 Gr. F316/316L STS	ASTM A240 316 STS Plate	ASTM A193 GR. B8M 316 STS	ASTM A194 GR. 8M 316 STS