

Penetrant Classification System

Penetrants	Type 1	Fluorescent Dye
	Type 2	Visible (Red) Dye
Removal Method	Method A	Water Washable
	Method B	Post Emulsifiable, lipophilic (oil base)
	Method C	Solvent
	Method D	Post Emulsifiable, hydrophilic (water base)
Removers	Class 1	Halogenated (non-flammable)
	Class 2	Nonhalogenated (flammable)
	Class 3	Special Application
Developers	Form a	Dry Powder
	Form b	Water Soluble
	Form c	Water Suspensible
	Form d	Nonaqueous Type 1 Fluorescent (solvent based)
	Form e	Nonaqueous Type 2 Visible (solvent based)
	Form f	Special Application
Fluorescent Sensitivity*	Level 1/2	Ultra Low
	Level 1	Low
	Level 2	Medium
	Level 3	High
	Level 4	Ultra High

*No sensitivity level classification exists for Type 2 Visible Penetrants

Specifications: The current specification, AMS-2644 and its QPL-AMS-2644-1, establish the penetrant system classification scheme. The scheme ranks fluorescent penetrants in terms of their sensitivity and removal properties. It also classifies developers and removers. Various classes of penetrants are approved for different inspection requirements. Penetrant users should assure that inspection procedures meet production requirements.

Consultation: It is important that a penetrant system match production requirements, not only to assure that specifications are met, but also to assure that sensitivity levels and inspection methods meet inspection criteria. Some applications have very stringent criteria calling for the highest sensitivity, while others accept lower levels of sensitivity. When penetrant systems are not appropriately matched to inspection criteria, unnecessarily high penetrant materials costs as well as the unnecessary rejection of parts can result. Or worse, parts can be accepted that otherwise should have been rejected, leading to parts failure, or recall. Sherwin Incorporated welcomes the opportunity to help users choose the appropriate combination of penetrant materials.