

BY-LUX™ PENETRANT

Approved Group I & III of MIL-I-25135 Rev. C



PRODUCT INFORMATION

Description: By-Lux™ is a unique penetrant that provides indications under conventional, "white" light and under "black" light. Under white light, flaw indications are red; under black light, indications are fluorescent orange.

By-Lux™ has a low sulfur and chlorine content with a flash point of 200°F.

Special Features: Sherwin By-Lux™ penetrant is as easy to use as a visible dye penetrant. However, additional black light inspection will help verify whether white light indications are valid.

Additionally, By-Lux™ is compatible with fluorescent penetrant products. Normally, red dye penetrants are incompatible with fluorescent penetrants since the red dye tends to kill the fluorescent penetrant response. This is troublesome when tight cracks are suspected, and when a second inspection is deemed less reliable because residual red dye penetrant may remain in surface flaws following an initial inspection. Flaws initially identified with By-Lux™ can be verified with subsequent applications of fluorescent penetrants without worrying that later inspections will be invalidated by residual red dye interference.

By-Lux™ is a nearly colorless liquid. It turns red in contact with water or with D-100 developer. By-Lux™ is easier to bleach from clothing than conventional visible dye penetrants, however, it is difficult to remove from skin and the use of gloves and protective clothing is recommended.

Companion Materials:

- | | |
|--------------|---|
| Developers - | Sherwin D-100 Nonaqueous (form d)
Sherwin *D-104A Nonaqueous (form d)
Sherwin D-106 Nonaqueous (form d)
*Note: D-104A is preferred performance |
| Removers - | Sherwin DR-60 (Class 2)
Sherwin DR-62 (Class 2)
equivalent QPL-25135/QPL-AMS-2644 removers |

- Container Sizes:**
- one-gallon cans
 - case of 4 one-gallon cans
 - five-gallon pail
 - 55-gallon drum
 - case of 12 aerosol cans

Basic Instructions: (These instructions describe the basic process. They may be amended by the user to comply with applicable specifications and/or inspection criteria provided by the contracting agency.) By-Lux™ requires no special procedures; it is used much like other penetrant materials.

1. **Clean Surface:** By-Lux™ must be applied to a dry surface that is free of soils, oils, or solvents that would impede the penetrant's entering surface flaws. If there is any doubt concerning the surface's cleanliness, the surface should be cleaned with Sherwin's DR-62, DR-60, or similar product.
2. **Application:** Apply By-Lux™ only to clean, dry surfaces by spraying, flowing, brushing or dipping.
3. **Dwell-Time:** A minimum 5 minute dwell time is suggested, although when ambient temperatures are below 60°F, when particularly tight cracks are suspected, or when the part is especially critical, the dwell time should be extended to 10 minutes, or longer. To increase sensitivity, as well as conserve material, allow the penetrant to drain from the part.

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4. **Removal:** By-Lux™ can be removed from small areas by wiping with clean rags or toweling which have been moistened with **DR-60 Cleaner-Remover** or **DR-62 Cleaner**. By-Lux™ may also be removed by an ambient temperature, coarse, plain water spray. Avoid over washing or using heated water.
5. **Drying:** Surface may be allowed to dry naturally. Speed drying by blotting the surface with clean, dry toweling or by placing part in a recirculating oven set at about 160°F. Wiping may smear indications. Do not over dry.
6. **Developing:** Use (non-aqueous) developer to draw flaw-entrapped penetrant to the surface and reveal flaw locations against a white background. Sherwin (non-aqueous) developer is essential for activating and fixing By-Lux™. Dry powder, water-base, and competitive non-aqueous developers do not give full performance.

Spray developer lightly and evenly on completely dry part surface. Examine surface under white or black light for flaw indications.

Applicable Specifications:

MIL-I-25135 Rev's. C
ASME B & P Vessel Code
Navships 250-1500
RDT-F3-6

Stone and Webster
MIL-STD-271 E
ASTM-E-165
ASTM E 1418

AECL
MIL-STD 6863
ASTM E 1220
ASTM E 1417

PRECAUTIONARY INFORMATION

By-Lux™ is a combustible liquid. Use with adequate ventilation and away from sparks, fire or open flame. Avoid prolonged or repeated contact with skin. Do not take internally. Avoid prolonged or repeated breathing of vapors. Read the label on the container for additional precautionary information. Never puncture, heat, or burn spray cans: store at less than 120°F; keep out of direct sun.

