

## Paragraph Numbers Pertaining to Scratch and Dig Inspection in Various Standards

Standard	ANSI/OEOSC OP1.002-2009	MIL-PRF-13830B	MIL-C-48497A	MIL-F-48616	MIL-C-675C	MIL-M-13508
Status	Active	Active	Inactive since 1997	Inactive since 1997	Active	Inactive since 1997
Transmission Method 1	3.7.2.1 & Figure 3: 40 watt incandescent or one 15 watt cool white fluorescent	4.2.2.1: 40 watt incandescent or one 15 watt cool white fluorescent				
Transmission Method 2	3.7.2.2 & Figure 4: 40 watt incandescent or one 15 watt cool white fluorescent	4.2.2.2: 40 watt incandescent or one 15 watt cool white fluorescent		4.6.5 and 4.6.7→4.6.4 and Figure 1: two 15 watt cool white fluorescents		
Reflection	3.7.2.3 & Figure 5: two 15 watt cool white fluorescents	C.4.5.3.4→C.4.5.3.1: two 15 watt cool white fluorescents	4.5.2.1 & Figure 1: two 15 watt cool white fluorescents	4.6.5 and 4.6.7→4.6.4 and Figure 1: two 15 watt cool white fluorescents	4.5.3.4→4.5.3.1 & Figure 3: two 15 watt cool white fluorescents	4.4.3: See MIL-O- 13830 (MIL-PRF-13830B)
Transparent optic			Visual appearance 3.3.5.1 & 4.5.2.5.1	Scratch width 3.4.1.2 (letter grade)		
Opaque optic			B.4.4.3→4.2.2*	Scratch width 3.3.5.2 & 4.5.2.5.2		Scratch width 3.4.1.2 (letter grade)
Magnification	3.7.1.5, not to exceed 4X	C.4.5.3.4	4.5.2.5.2 for opaque surfaces only	4.6.5 (substrate) & 4.6.7.2 (coating)	4.5.3.4	Not mentioned

\* The Standard says "4.4.2." This is a typo.

### Notes:

1. MIL-PRF-13830B Appendix B is the same as MIL-M-13508.
2. MIL-PRF-13830B Appendix C is the same as MIL-C-675C.
3. MIL-C-48497A, MIL-F-48616 and MIL-M-13508 have been inactive for new design since 1997, so are not supposed to be referenced/specified on documents dated after that.
4. MIL-C-48497A specifies SQ inspection by reflection only. For transparent optics it says SQ must be specified by two numbers and refers you back to MIL-PRF-13830B and the Army drawing for the visibility scratch-dig comparison standards. For opaque optics it says SQ must be specified by two letters. The scratch letter grade specifies the maximum allowable scratch width.
5. MIL-F-48616 specifies SQ by two letters (i.e., scratch width) regardless of whether the optic is transparent or opaque.
6. MIL-F-48616 specifies two 15 watt fluorescents for inspection by transmission, whereas ANSI/OEOSC OP1.002-2009 and MIL-PRF-13830B specify one 15 watt fluorescent or a 40 watt incandescent for inspection by transmission.
7. The MIL standards that allow magnification do not specify how much is allowed.

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