



<b>Manufacturing Coating Specification</b>	<b>MCS103</b>
<b>Stress Relieving</b>	<b>AIT Reference: SR</b>

### Stress Relieving Requirements:

Material	Heat Treatment	Time/Temp/Cool	Application
Invar 36	Full anneal	1 hr at 1550 F or 2 hrs at 1350F, plus 1 additional hour for each 1.0 inch of thickness over 1.0 inch. Air or oven cool	Following extensive forming or welding
Invar 36	Stress Relief Anneal	2 hrs at 600 F plus 1 additional hour for each 1.0 inch of thickness over 1.0 inch. Air or oven cool	Between rough and final machining. Following minor weld repairs
Invar 42	Full Anneal	1 hr at 1650 F or 2 hrs at 1550F, plus 1 additional hour for each 1.0 inch of thickness over 1.0 inch. Air or oven cool	Following extensive forming, welding or machining operation
Invar 42	Stress relief anneal	2 hrs at 800 F plus 1 additional hour for each 1.0 inch of thickness over 1.0 inch. Air or oven cool	Between rough and final machining. Following minor weld repairs
A36 steel	Stress relief	1150°F +/-50°F for 2 hours, plus 15 minutes additional for each 1.0 inch of thickness over 2.0 inch. Oven cool to 600 F then air cool	Following extensive forming, welding or machining operation
QT100 Quenched and tempered steel	Stress relief	50°F lower than tempering temperature for 2 hours, plus 15 minutes additional for each 1.0 inch of thickness over 2.0 inch. Oven cool to 600 F then air cool	Following extensive forming, welding or machining operation

### Notes:

1. See industry standards/specifications for full application details.
2. Maintain all AIT tags and markings as supplied.
3. Remove all plugs and masking prior to shipping.
4. See AIT Quality Clause QA2 for Packing/Packaging requirements of finished parts. (The full text of the Quality Clauses can be obtained at [www.aint.com](http://www.aint.com) by clicking on "About AIT/Quality" link and then the "Quality Clauses" link.)