APPLICATION GUIDE FOR OXIDATION RESISTANT COATINGS

METALS	TEMP ° F	RECOMMENDED COATING	COATING THICKNESS DRY FILM	COMMENTS
Stainless Steel	1800 -2400° F	ATP - 641 ATP - 10 ATP – 924x	10 - 20 mils	Reduces cracking Controls rolled in scale Reduces surface defects Reduces secondary finishing Oxidation resistance Heat retention
Tools Steels	1000 - 2200° F	ATP - 641 ATP - 304 ATP - 3249	10 -20 mils	Controls decarb Heat retention Oxidation resistance Reduces secondary finishing Slip resistant Insulation
Low Alloy and Carbon Steels	1400 - 1900° F 1950 - 2350° F	ATP - 504 ATP - 642 ATP - 505 ATP - 641	10 - 20 mils	Oxidation resistance Retards formation of oxide scale Inexpensive method to improve Yields and reduce metal loss Controls rolled in scale Heat absorbing
Titanium Alloys	1400 - 1800° F 1800 - 2400° F	ATP - 707 ATP - 360 ATP - 41	5 - 10 mils 10 - 20 mils	Oxidation resistance Boron-free Controls hydrogen penetration Slip resistant
Molybdenum and Zirconium Alloys	1800 - 2300° F	ATP - 808	3 - 10 mils	Controls smoking Oxidation resistance
Super Alloys	1800 - 2250° F	ATP - 3851 ATP - 10	10 - 20 mils	Heat retention Prevent cracking Improve metal movement
Nickel Alloys	1800 - 2200° F	ATP - 610 ATP - 722	10 - 20 mils	Oxidation resistance Decarburization resistance

Oxidation Resistant and Protective Coatings For Metals

ATP

Advanced Technical Products Supply Co., Inc.
6186 Centre Park Drive
West Chester, Ohio 45069

513-851-6858

atp@advancedtechnicalprod.com

DESCRIPTION

ATP coatings are advanced, water based, non-hazardous and cost-effective metal protection systems. They are formulated to protect metals and alloys from oxidizing or contaminating atmospheres at high temperatures for extended times. The coatings prevent the diffusion of gases into and out of the metals.

The water-based coatings are applied prior to heating for rolling, forging, hot extruding, annealing or other heat treatments.

ATP coatings are formulated to protect:

- *Tool Steels*
- *Stainless Steels*
- *Nickel Alloys*
- *Carbon and low Alloys*
- *Zirconium Alloys*
- *Titanium Alloys*
- *Molybdenum*

ATP coatings are cost effective because they retard the formation of oxide scale, reduce surface rejects, minimize secondary finishing operations, reduce the loss of valuable metal while improving product quality.

SOME ADVANTAGES

***Stainless Steels and Super Alloys:**

- *minimizes formation of oxide scale*
- *reduces surface defects*
- *reduces secondary finishing operations*
- *spalls on cooling*
- *heat retention*

***Tool Steels:**

- *controls decarburization*
- *retards formation of oxide scale*
- *reduces forged or rolled in scale*
- *reduces secondary finishing operations*
- *improves yields*

***Low Alloys and Carbon Steels:**

- *reduces formation of oxide scale*
- *improves yields*
- *reduces rolled or forged in scale*
- *minimizes loss of metal*
- *reduces build-up of oxide scale in reheat furnaces*

***Titanium Alloys:**

- *controls hydrogen penetration*
- *provides heat distribution and metal movement*
- *minimizes surface defects*
- *controls alpha case*

***Molybdenum and Zirconium Alloys:**

- *oxidation resistance*
- *smoke resistance*

All coatings have excellent green strength to allow the coated parts to be loaded into the furnace without damage to the unfused coating.

HOW TO USE COATINGS:

Mixing Instructions: For best results, the coatings should be well suspended and mixed. Coatings supplied at viscosity which can be adjusted for most coating techniques and processes. The viscosity can be adjusted with water and electrolytes.

Metal Preparation: Metal surfaces must be free of dirt, oil, grease and loose scale for best results.

How To Apply: The water based coatings can be sprayed with conventional, electrostatic or airless spray systems. May also be flow coated, dipped, or brushed.

Thickness: The proper thickness depends on the metal to be processed, time, and temperature. Coating thickness is most important and must be controlled.

Drying: The coatings are water based and should be dried. They can be applied to pre-heated metal up to temperatures of 150 - 200ºF. They can be air dried or dried in a drier. Special formulations will allow charging into furnace while the coating is still wet. The coating will dry to a hard finish with excellent green strength. This will minimize damage to the coating prior to entering the furnace.

GENERAL DATA:

- Supplied in 1 and 5 gallon pails, also in 55-gallon drums
- Shelf Life: 6 months to a year