

UNIVIT® APX

ENAMELING STEEL

Appliances

Cookware

Architectural



AK Steel's UNIVIT® APX cold-rolled steel for enameling provides an excellent combination of enamability and forming performance. This product provides enhanced sag resistance, strength after strain and fire, and resistance to carbon boiling.

Product Description

PRODUCT FEATURES

ENAMELABILITY

This product is well suited for applications using ground coat, ground + cover coat, and two coat - one fire porcelain enamel systems. This product is free of enamel fishscale, provided good adhesion is achieved by use of proper frit and firing practices.

This grade is compatible with all enameling processes commonly used including electrostatic deposition and wet spray.

FORMABILITY

UNIVIT APX has excellent formability, as characterized by r-values. This will assist in making difficult to form parts.

SURFACE FINISH

Typically, this grade is supplied with a matte finish. Alternate finishes can be provided to maintain effective lubrication during stamping or to satisfy specific customer requirements.

JOINING

UNIVIT APX can be readily welded using a variety of welding and joining processes including resistance welding, low heat input arc welding, laser welding and mechanical fastening. The effect of joining system on subsequent porcelain enameling operations should be evaluated by the end user for their specific applications.

APPLICATIONS

Applications of this grade include oven cavities, panels for appliances such as washing machines, dryers and cooktops, cookware, architectural panels and sign boards.



ENAMELING STEELS

Tables

TABLE 1 – TYPICAL MECHANICAL PROPERTIES

Orientation	YS		UTS		Elong. %	n-Value	r _m
	ksi.	MPa	ksi.	MPa			
Rolling Direction	23	159	42	290	43	0.215	≥ 1.7

Typical properties produced by AK Steel
All properties are tested per ASTM A370 and ASTM E8.

TABLE 2 – TYPICAL CHEMISTRY

Grade	C	Mn	P	S	Si	Cu	Al	Ti
UNIVIT APX*	< 0.003	0.30	0.01	0.01	0.01	0.02	0.05	–

*Typical chemistry, representative of finished sheet. B and N additions are also made.

TABLE 3 – PRODUCT AVAILABILITY

Thickness (in.) / (mm)	Width (in.) / (mm)
0.019" – 0.082" / (0.48 mm – 2.16 mm)	32" – 67.25" (812.8 mm – 1708.15 mm)

*For sizes outside these limits, please contact your AK Steel representative.

FIGURE 1 – BASE METAL SAG

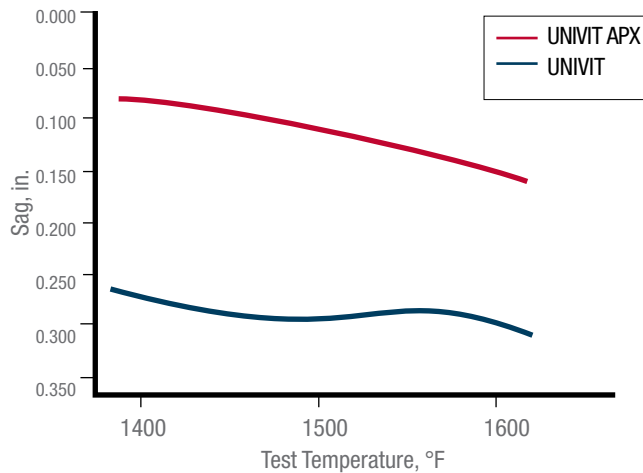


FIGURE 2 – STRENGTH AFTER STRAIN & FIRE

