

DIRECTLY ENAMELABLE FORMING COATING

Elimination of degreasing



Additional treatments: Direct coatability

direct-e® fact sheet | Stand 08/2018

A COST-REDUCING SOLUTION FOR OUR CUSTOMERS

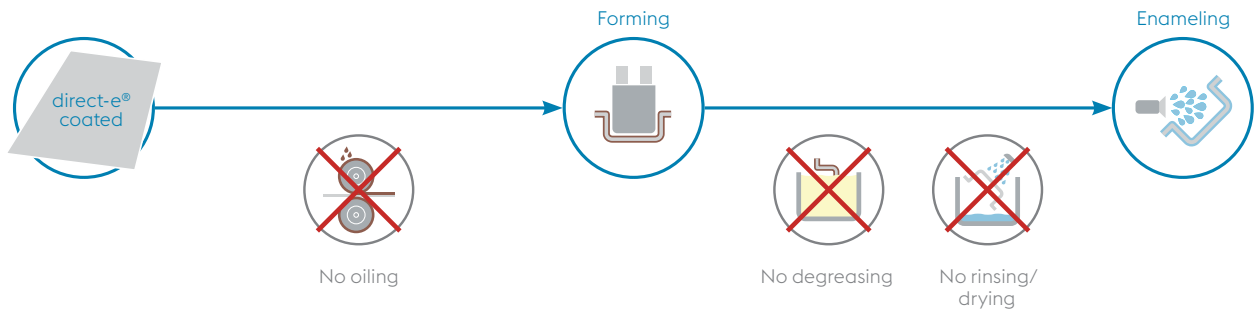
Cold-rolled steels for enameling made by voestalpine in combination with direct-e®, the innovative directly enamelable forming coating, makes it possible to apply enamel directly following the forming process. The degreasing process of the formed component becomes dispensable, thus providing the customer with significantly reduced cost. direct-e® is applied in production as a subsequent surface treatment of cold-rolled enameling steels. It does not consist of mineral components and combines a series of innovative and positive effects, especially on enameled steels.

CONVINCING ADVANTAGES:

- » Direct-enameled steels without any degreasing
- » Reduced processing costs at the customer
- » Excellent corrosion protection during storage and transport
- » Best formability
- » Outstanding weldability
- » Conservation of resources and environmental protection

direct-e® is used primarily in the electrostatic powder enameling process where enameling powder is applied in dry form to the steel surface. The recommended weight is 1.0 g/m² on both sides.

ELIMINATE THREE PROCESS STEPS WITH direct-e®



TYPICAL APPLICATIONS

direct-e®, the directly enamelable forming coating, finds its applications primarily in the household-appliance industry:

- » Baking sheets
- » Kitchen ovens
- » Stove covers
- » Stove tops

Applications in other sectors where powder enameling is used may be possible subject to testing.

PRODUCT PROPERTIES IN COMPARISON

	Corrosion		Processing				Environment		
	Transport	Storage	Powder enameling without the need to degrease	Powder enameling with degreasing	Forming	Weldability	Free from fluorine	Free from chrome	Free from solvents
direct-e®	++	++	++	++	+	++	++	++	++
Pre-lube oil	++	++	-	++	++	+	++	++	++
Corrosion protection oil	++	++	-	++	+	+	++	++	++

Perfectly suited ++ + +- - Not suited

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To find out more about enameling steels, please visit us at www.voestalpine.com/steel



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