



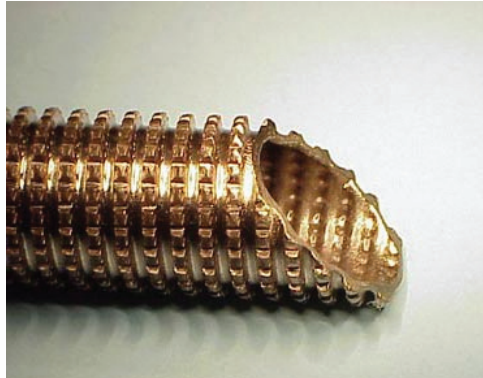
**WOLVERINE TUBE, INC.**  
*Engineering Thermal Innovation*



## E/A Trufin®

### Specialty OD Absorption Surface

E/A Trufin is a multipurpose commercial tube especially suited for absorption chillers and for applications with laminar flow on the shell side (or the annulus in double coil heat exchangers) like oil coolers. The outside surface is a three dimensional surface where designed to increase surface tension induced (Marangoni) convection in absorbers, both with and without additives. The tube also has a corrugated inner surface that improves the water side heat transfer coefficient. The special outside surface also acts as a turbulator for shell side flow and helps improve heat transfer in laminar flow.



This tube is manufactured with easy insertion into tube sheets and baffles in shell and tube heat exchangers. Due to the stringent cleanliness conditions for absorbers, both OD and ID residue levels are controlled within 0.03 grams of solid and organic residue per square foot of surface area. If specified by customer, the OD surface may be made wettable at an extra cost.

#### Alloys Available and Applicable Standards

UNS C12000 (DLP Copper) and  
UNS C12200 (DHP Copper) to  
ASME SB75 and ASME SB359

UNS C70400 (95/5 Copper-Nickel)  
and UNS C70600 (90/10 Copper-  
Nickel) to ASME SB111 and ASME  
SB359

#### Product Formats

Straight Lengths to 20 feet, + 1/8  
inch maximum variation

Straight Lengths over 20 feet, +  
5/32 inch maximum variation

Ends are supplied either brush  
deburred or chamfered

#### Packaging

Packaging options include wooden  
boxes and shipping frames.

#### Temper Available

As finned temper or annealed  
temper

#### Testing

All tubes are tested per the  
requirements of ASTM E243.

# E/A Trufin®

Standard Sizes			Plain End Dimensions		Finned Section Dimensions			
Catalog Number	Outside Diameter inch (mm)	Nominal Wall inch (mm)	Outside Diameter inch (mm)	Wall inch (mm)	Fin Per Inch	Finished Fin OD inch (mm)	Min. Wall Under Fins inch (mm)	Root Diameter inch (mm)
<b>E/A Trufin - UNS C12000, C12200, C70400, C70600</b>								
68-113028	5/8 (15.88)	0.028 (0.711)	0.583 (14.81)	0.043 (1.09)	11	0.590 (14.99)	0.025 (0.635)	0.492 (12.50)
68-115030	3/4 (19.05)	0.030 (0.762)	0.743 (18.87)	0.043 (1.09)	11	0.753 (19.13)	0.027 (0.686)	0.657 (16.69)

Standard Sizes		Inside Dimensions		Areas			
Catalog Number	Weight Per Unit Length lb/ft (kg/m)	Nominal Inside Diameter inch (mm)	Fin Height inch (mm)	Nominal Inside Surface Area ft <sup>2</sup> /ft (m <sup>2</sup> /m)	Actual Inside Surface Area ft <sup>2</sup> /ft (m <sup>2</sup> /m)	Nominal Outside Surface Area ft <sup>2</sup> /ft (m <sup>2</sup> /m)	Actual Outside Surface Area ft <sup>2</sup> /ft (m <sup>2</sup> /m)
<b>E/A Trufin - UNS C12000, C12200, C70400, C70600</b>							
68-113028	0.276 (0.411)	0.436 (11.07)	0.043 (1.092)	0.114 (0.035)	0.133 (0.041)	0.133 (0.041)	0.299 (0.091)
68-115030	0.358 (0.533)	0.597 (15.16)	0.043 (1.092)	0.156 (0.048)	0.180 (0.055)	0.180 (0.055)	0.411 (0.125)