

# Heating Elements

## MATERIAL USE GUIDELINES

### Heating Elements

Boltaron sheet can be thermoformed using all heating element and heater types.

Source	Description	Advantages	Limitations
<b>Calrod</b>	Metal tubes most often found in older equipment	Low cost Long heating life	Long heat-up time, non-uniform heating Degrade, become inefficient in time Inadequate for multiple heat zones
<b>Ceramic</b>	Commonly used industry wide	Long lasting, versatile Easy to zone for good balance Uniform heat over long runs Moderate cost	Slower heat-up and response time vs. halogen and quartz
<b>Halogen, Quartz</b>	Growing in use, ideal for shuttle type equipment	Fast heat-up and cool down times Excellent control, easy to zone Allow heat levels or steps in a cycle Fast cycling times; high efficiency	Fragile, made of glass Typically higher cost
<b>Gas Catalytic</b>	Diffusion heater; chemical process produces infrared energy	Far lower energy cost than electric resistance type heating elements	Temperature zone balance can be more difficult or sensitive than the other heating elements



[www.boltaron.com](http://www.boltaron.com) | +1 800 342 7444

DISCLAIMER AND LIMITATION OF WARRANTY: All information contained herein is believed by SIMONA AMERICA Inc. to be reliable. Typical properties are based on laboratory tests conducted on material samples in accordance with standard test methodology. SIMONA AMERICA Inc. makes no express or implied warranty that its products will perform in accordance with the data in all conditions and circumstances. To determine suitability for use, users must test applications under actual operating conditions. As a result, ALL EXPRESS OR IMPLIED WARRANTIES IN CONNECTION WITH SIMONA AMERICA INC. and BOLTARON PRODUCTS INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED.