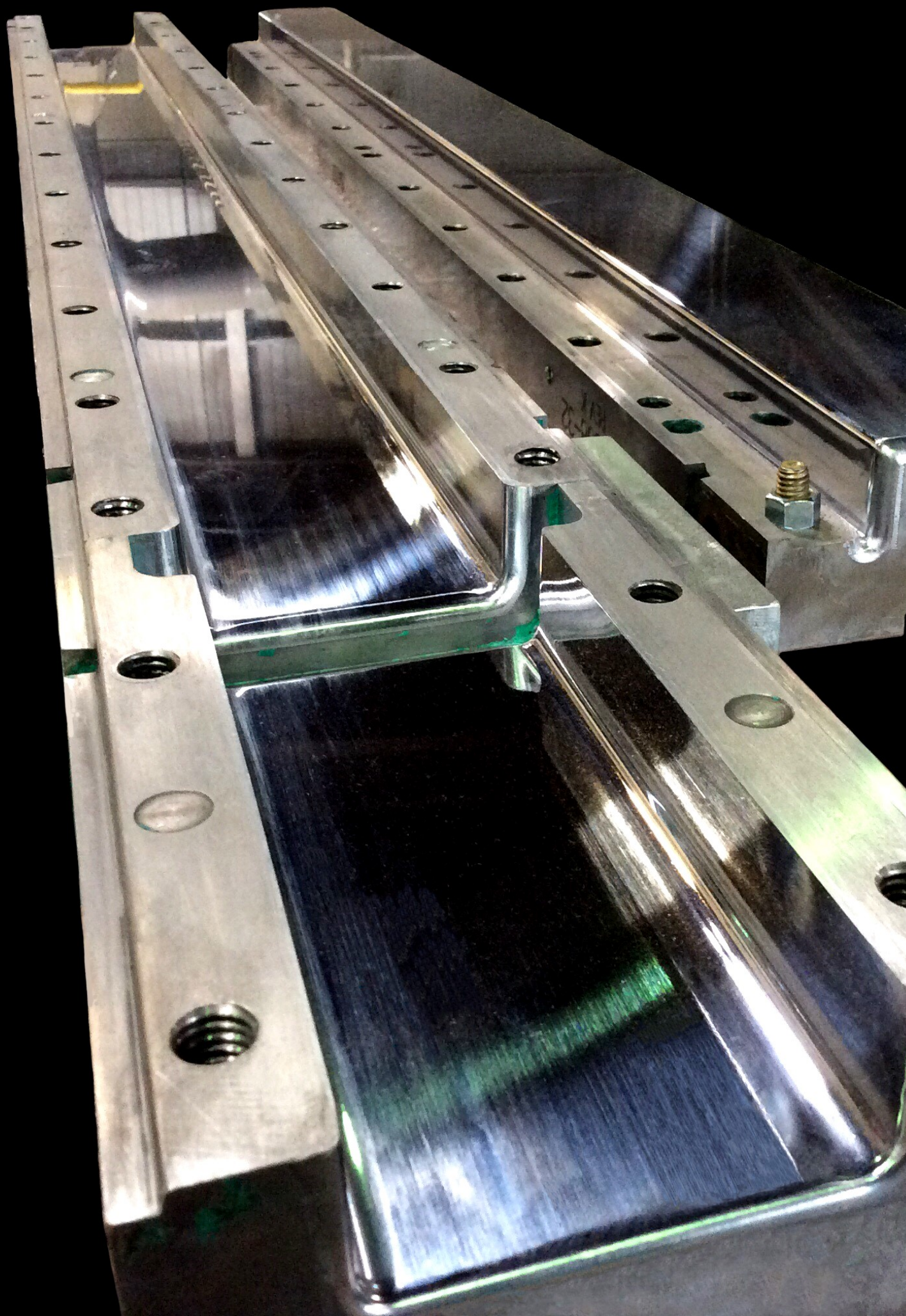
SURFACETEC

# PULTRUSION TOOLING



# PULTRUSION TOOLING

Dies designed for pultruded FRP profiles and shapes represent a particular challenge for manufacturers related to tool maintenance lifecycles.

Due to the heavy abrasion of die surfaces from glass reinforcing fibers common in FRP resins, functional hard chrome deposits must have performance characteristics that allow longest possible production lifecycles.

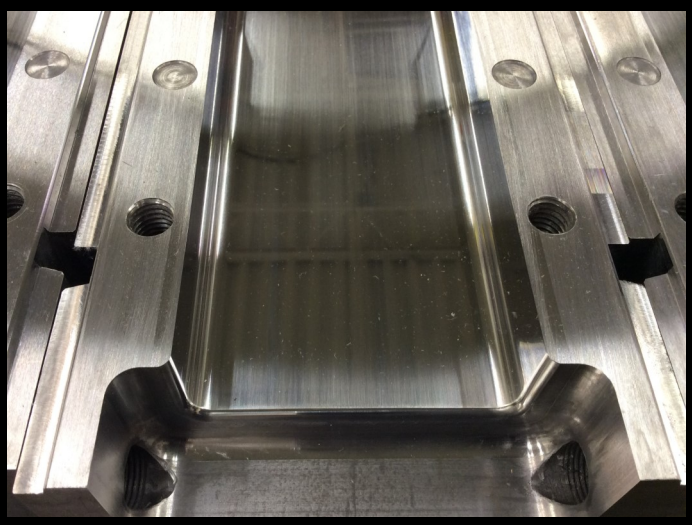
SURFACETEC has gained extensive experience with these types of dies and utilizes methods to address their particular surfacing demands. At 68 to 72 HRc, our high-speed hard chrome process yields one of the hardest functional deposits currently available with high sliding wear and dry abrasive wear performance.

Contact surfaces are hard chrome plated with varying thickness along the length of the die. Since the abrasive effects of typical FRP resins increase as they begin to cool and harden while transiting through the die, a high-build chrome thickness is deposited for 4” to 6” at the die ends. Although abrasion is highest at the outboard die end, having an engineered high-build thickness at both ends allows die rotation midway through the production cycle of the tool.

To further reduce friction, the contact surfaces are polished in-house before and after plating, with a typical final polish to B-2 or better per customer specifications.

pultrusion die set for a flat FRP shape

high-build hard chrome at die end



die for a channel FRP shape

typical post-plate polish to B-2 or better

We look forward to an opportunity to discuss your pultrusion tooling requirements and learn how we may be able to provide new and efficient solutions to help streamline tool maintenance and enhance lifecycles. As part of initial evaluations, we are accustomed to providing qualification samples in coupon form, or better, using an actual die segment.

## CONTACT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## HARD CHROME PLATING

- 68 HRc to 72 HRc as deposited
- Falex lubricated wear test = 10.0 mg
- Taber wear test = 9.0 mg loss/10k cycles
- micro-hardness range = 920 KHN to 1,000 KHN
- micro-cracking > 1,000 cracks per inch
- standard and engineered (high-build)
- glazed & flash

## TECHNICAL SURFACE POLISHING

### S.P.I. A diamond finishes

- A-1 grade #3 diamond buff
- A-2 grade #6 diamond buff
- A-3 grade #15 diamond buff

### S.P.I. B paper finishes

- B-1 #600 grit emery paper
- B-2 #400 grit emery paper
- B-3 #320 grit emery paper

### S.P.I. C stone finishes

- C-1 #600 grit stone finish
- C-2 #400 grit stone finish
- C-3 #320 grit stone finish

### S.P.I. D dry blast finishes

- D-1 dry blast/#11 glass finish
- D-2 dry blast/#240 oxide finish
- D-3 dry blast/#24 oxide finish


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