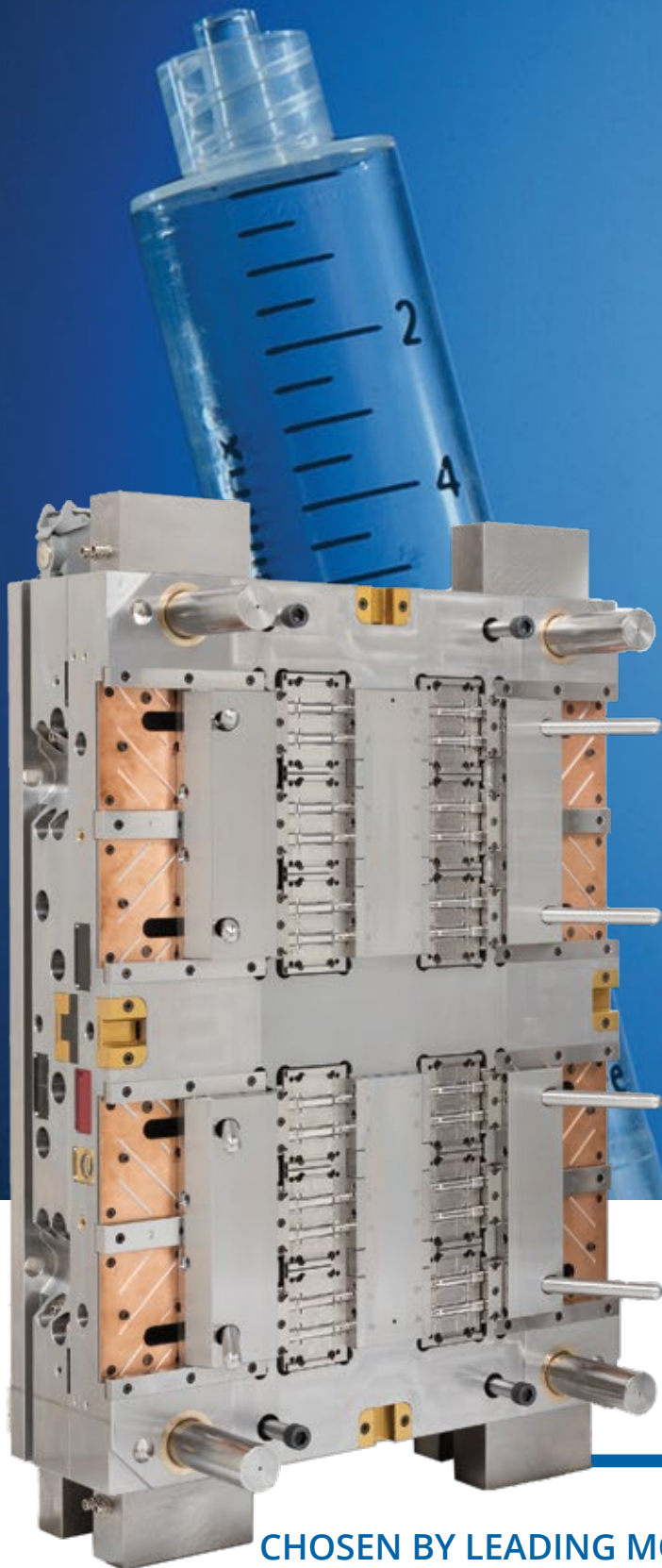


# EDRO



# RoyAlloy<sup>®</sup>

STAINLESS HOLDER STEEL

CHOSEN BY LEADING MOLD MAKERS AND MOLDERS WORLDWIDE

Guaranteed to provide unmatched Productivity, Performance, and Value

# Free Machining Stainless Holder Steel

## RoyAlloy®

**EDRO RoyAlloy** is a free machining martensitic stainless steel, supplied pre-hardened at ~32HRC.

**RoyAlloy** is registered under DIN 1.2095.

**RoyAlloy** was developed and patented by EDRO to provide superior properties and performance in all critical areas of the manufacture and operation of high volume plastics tooling.



**RoyAlloy** is produced from recycled materials.

### APPLICATIONS

- Plastic injection mold bases
- Mold components
- Rubber molds
- Constructional parts
- Plastic extrusion tooling



# What makes RoyAlloy® unique?

## RoyAlloy (DIN 1.2095) provides significant cost savings and advantages compared to 420F (DIN 1.2085) type stainless steels

### SUPERIOR DIMENSIONAL STABILITY

RoyAlloy has **zero retained austenite in the microstructure resulting in unparalleled stability** during manufacturing and over the life of the tool. In contrast, 420F (DIN 1.2085) contains retained austenite which gradually transforms into untempered martensite under molding temperatures and pressures, leading to volume changes and instability over time.

### HIGHER THERMAL CONDUCTIVITY

RoyAlloy has up to **15% higher thermal conductivity** compared with 420F (DIN 1.2085) type stainless steels, a critical feature in today's high productivity environment, leading to reduced cycle times.

### ENHANCED MACHINABILITY

A combination of a special microstructure, chemical composition, and consistent through hardness leads to **superior machinability with faster feeds and speeds and extended cutting tool life, providing substantial time and cost savings.**

### EXCELLENT CORROSION RESISTANCE

The designed balance of key chemical components in RoyAlloy results in a stainless steel ideally suited for **long service periods with no corrosion or contamination.**

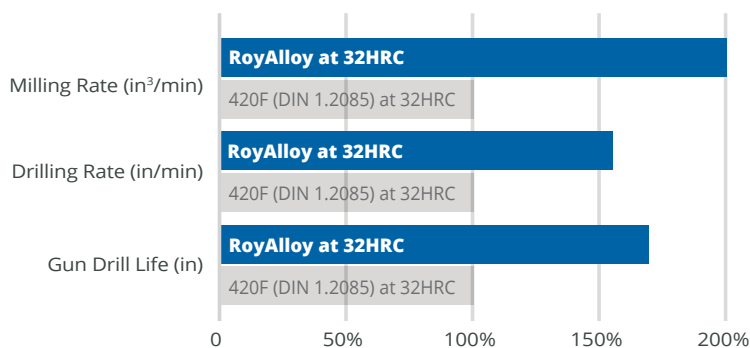
### IMPROVED TOUGHNESS AND DUCTILITY

According to Charpy-V-Notch testing, RoyAlloy's superior toughness and ductility provide more than **double the impact strength and resistance to cracking** compared to 420F (DIN 1.2085) type stainless steels.

### SAFE AND SIMPLISTIC WELDABILITY

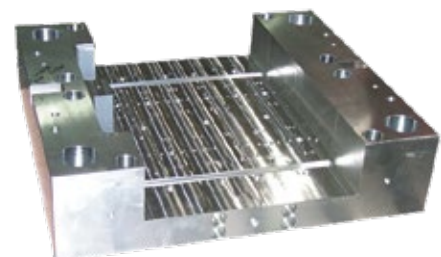
RoyAlloy's low carbon chemical composition allows for **safe and simple welding** with uniform hardness throughout the welded area and minimal risk of cracking.

#### ENHANCED MACHINABILITY



\*Based on independent case studies. Individual results will vary and may frequently exceed percentages shown.

#### SUPERIOR DIMENSIONAL STABILITY



RoyAlloy plate shown after extensive pocket milling measured only 0.006" (0.15mm) distortion from corner to corner - plate size 6" x 28" x 32" (152mm x 711mm x 813mm).

# Products and Services



## **MATERIALS & MACHINING SERVICES**

EDRO offers a wide range of specialized materials and machining services for requirements in hot work, cold work, and plastic tooling applications.



## **CUSTOM MOLD BASES**

Complete manufacture of high precision custom mold bases, designed to provide precision alignment and long lasting performance.



## **PVD/DLC COATINGS**

EDRO provides thin film PVD/DLC coatings to improve the quality, functionality, efficiency and durability of tools, specialized parts and mold components.



## **ADDITIVE MANUFACTURING**

From powder to parts, EDRO offers high quality powders for your 3D metal printing needs, as well as complete additive manufacturing solutions.

# EDRO

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