

UNDERSTANDING YOUR TOOLING OPTIONS:

What is the
right mold for
your success?



Tony Short
Technical Sales
Diversified Mold &
Castings

WHAT DRIVES THE REQUEST FOR TOOLING QUOTE?

■ Price

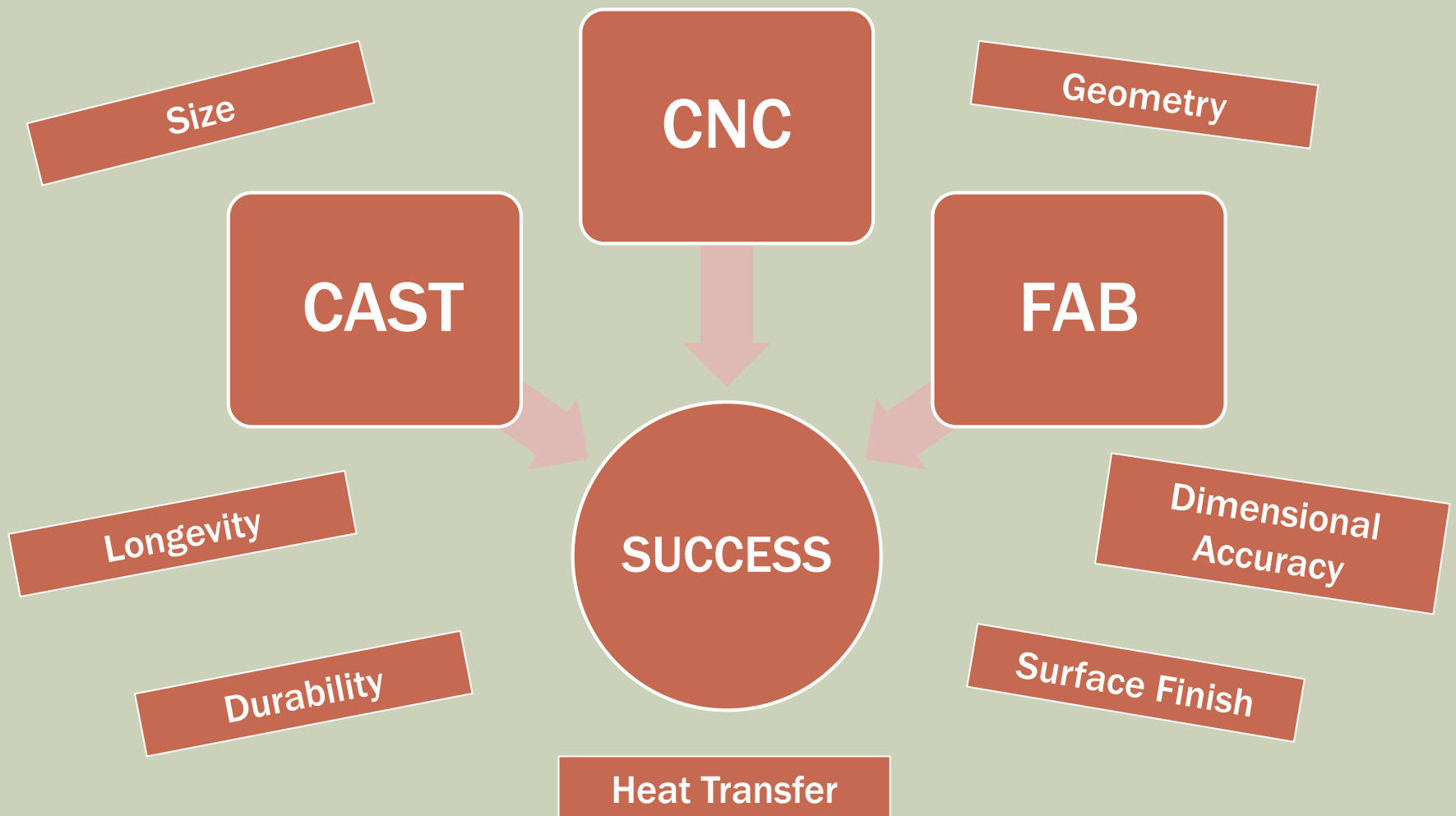
- Competitive Global Markets: The world is getting smaller
- Exchange rates
- Tariffs

■ Lead Time- How fast can you produce it?

■ Demand for better quality tooling

■ Advancements in technology- What's New?

WHAT DO WE MEAN BY “RIGHT”?



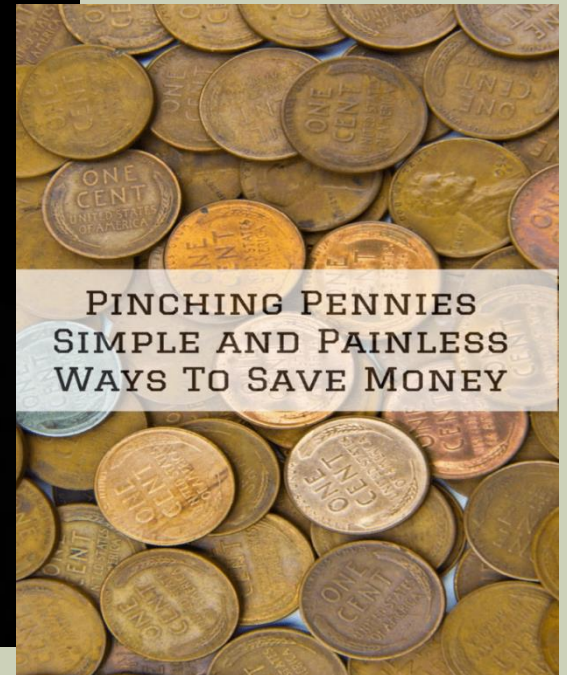
CRITERIA CHART

Criteria	Fabricated Mild Steel	Fabricated Stainless Steel	Fabricated Aluminum	Sandcasting	CNC Machined
Cost	A	C	B	B	B-
Small Molds	C-	C-	C-	A	A
Medium Molds	B	B	B	A	A
Large Molds	A	A	A	A	B
Extra Large Molds	A	A	B	A	C
Part Geometry	D	D	C	A	B
Multi-Piece Molds	C	C	C	B+	B+
Durability	C	B-	D+	A-	A-
Longevity	B	B+	C-	A	A
Mold Modifications	B-	B-	C	A	A
Mold Wall Uniformity	A	A	A	B	A
Heat Transfer	B	D	B	A	B+
Mold Wall Corrosion	D	A-	A-	A-	A
Mold Wall Shot Peen	F	F	B	A	A-
Mold Wall Texture	D	F	D	A	D
Dimensional Accuracy	C	C	C	B+	A
Multiple Molds	D	D	D	A	A
Patterns/Model	N/A	N/A	N/A	A	C

COST

Is
Pinching Pennies
Worth It?

You're Wasting Your Time
Pinching Pennies



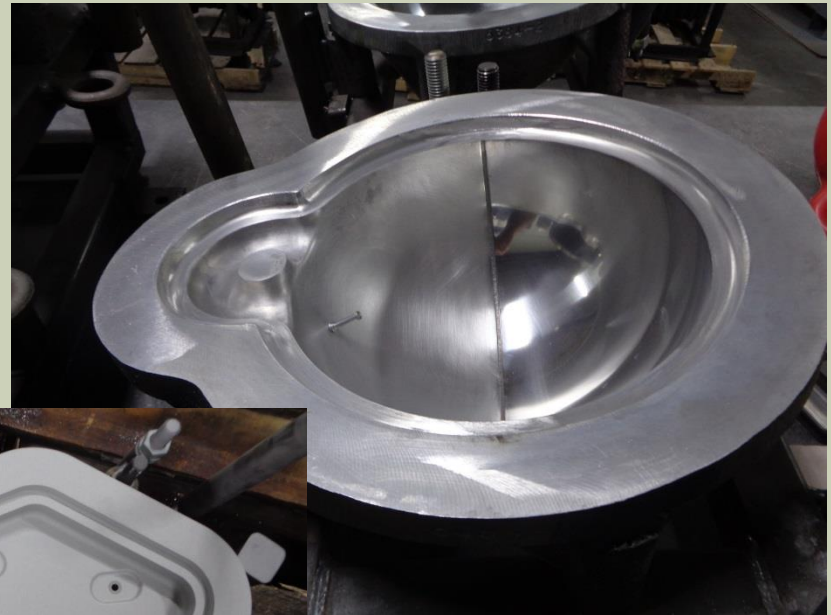
PINCHING PENNIES
SIMPLE AND PAINLESS
WAYS TO SAVE MONEY

CRITERIA CHART

Criteria	Fabricated Mild Steel	Fabricated Stainless Steel	Fabricated Aluminum	Sandcasting	CNC Machined
Cost	A	C	B	B	B-
Small Molds	C-	C-	C-	A	A
Medium Molds	B	B	B	A	A
Large Molds	A	A	A	A	B
Extra Large Molds	A	A	B	A	C
Part Geometry	D	D	C	A	B
Multi-Piece Molds	C	C	C	B+	B+
Durability	C	B-	D+	A-	A-
Longevity	B	B+	C-	A	A
Mold Modifications	B-	B-	C	A	A
Mold Wall Uniformity	A	A	A	B	A
Heat Transfer	B	D	B	A	B+
Mold Wall Corrosion	D	A-	A-	A-	A
Mold Wall Shot Peen	F	F	B	A	A-
Mold Wall Texture	D	F	D	A	D
Dimensional Accuracy	C	C	C	B+	A
Multiple Molds	D	D	D	A	A
Patterns/Model	N/A	N/A	N/A	A	C

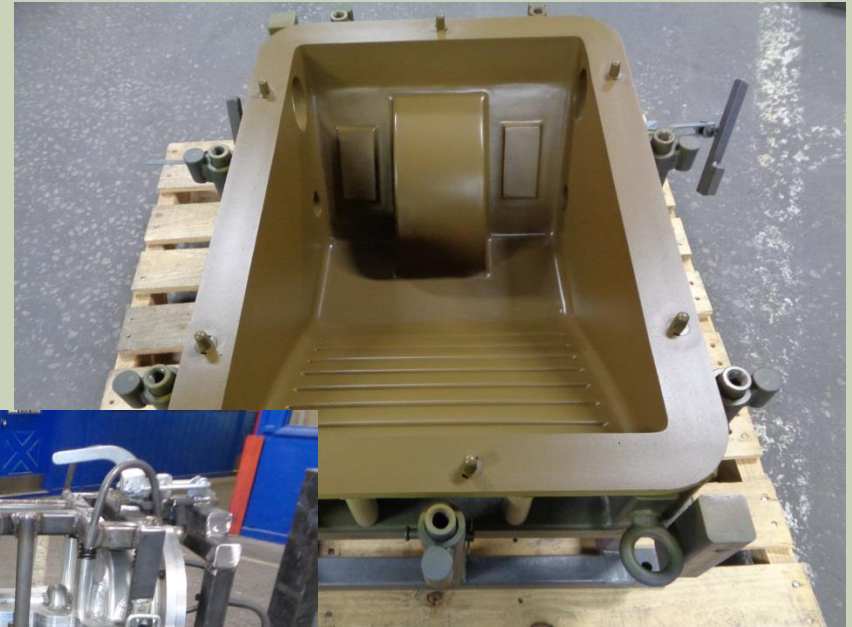
MOLD SIZE

Small Mold- Up to 12" Length x Width (305mm)



MOLD SIZE

Medium Mold- 13" to 36" (330-914mm)



MOLD SIZE

Large Mold- 37" to 72" (940-1830mm)



MOLD SIZE

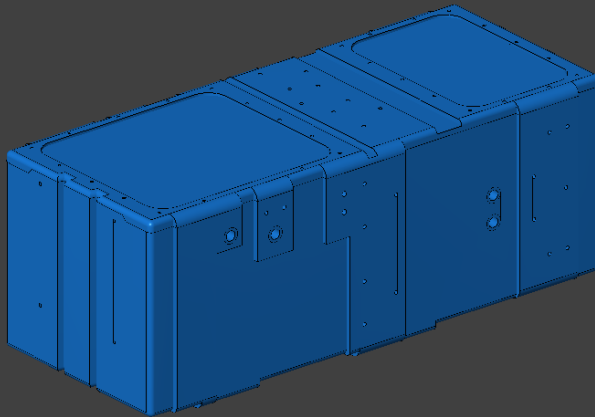
Extra Large Mold- 73" and Up (1854mm & Up)



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Cost	A	C	B	B	B-
Small Molds	C-	C-	C-	A	A
Medium Molds	B	B	B	A	A
Large Molds	A	A	A	A	B
Extra Large Molds	A	A	B	A	C
Part Geometry	D	D	C	A	B
Multi-Piece Molds	C	C	C	B+	B+
Durability	C	B-	D+	A-	A-
Longevity	B	B+	C-	A	A
Mold Modifications	B-	B-	C	A	A
Mold Wall Uniformity	A	A	A	B	A
Heat Transfer	B	D	B	A	B+
Mold Wall Corrosion	D	A-	A-	A-	A
Mold Wall Shot Peen	F	F	B	A	A-
Mold Wall Texture	D	F	D	A	D
Dimensional Accuracy	C	C	C	B+	A
Multiple Molds	D	D	D	A	A
Patterns/Model	N/A	N/A	N/A	A	C

PART GEOMETRY



CRITERIA CHART

Criteria	Fabricated Mild Steel	Fabricated Stainless Steel	Fabricated Aluminum	Sandcasting	CNC Machined
Cost	A	C	B	B	B-
Small Molds	C-	C-	C-	A	A
Medium Molds	B	B	B	A	A
Large Molds	A	A	A	A	B
Extra Large Molds	A	A	B	A	C
Part Geometry	D	D	C	A	B
Multi-Piece Molds	C	C	C	B+	B+
Durability	C	B-	D+	A-	A-
Longevity	B	B+	C-	A	A
Mold Modifications	B-	B-	C	A	A
Mold Wall Uniformity	A	A	A	B	A
Heat Transfer	B	D	B	A	B+
Mold Wall Corrosion	D	A-	A-	A-	A
Mold Wall Shot Peen	F	F	B	A	A-
Mold Wall Texture	D	F	D	A	D
Dimensional Accuracy	C	C	C	B+	A
Multiple Molds	D	D	D	A	A
Patterns/Model	N/A	N/A	N/A	A	C

LONGEVITY/DURABILITY



- Type of mold in relation to volume it produces
- Mold maintenance
- Mold storage

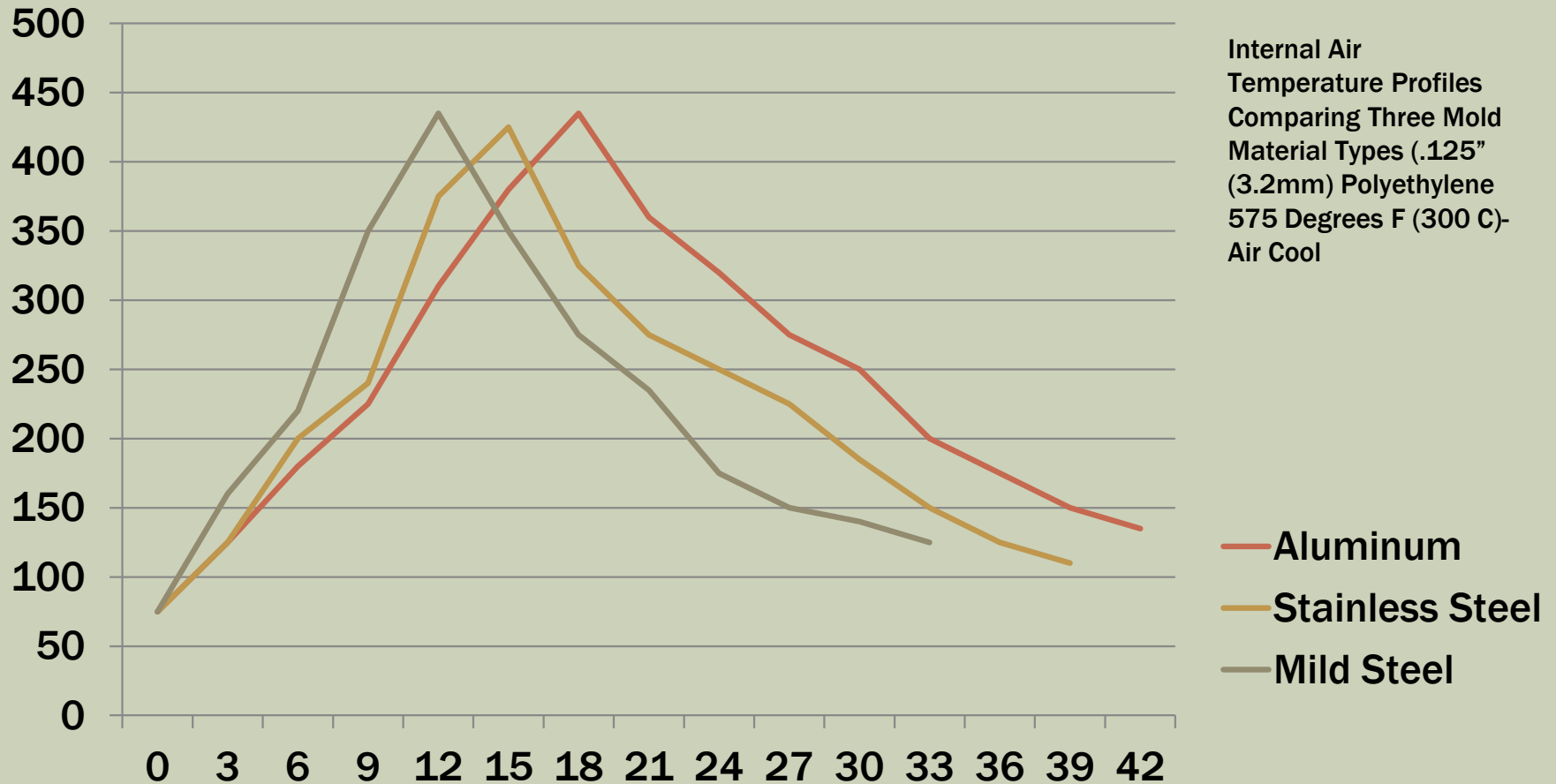


- Solid or Pieced?
- Geometry & Parting Lines
- Type of framework

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Medium Molds	B	B	B	A	A
Large Molds	A	A	A	A	B
Extra Large Molds	A	A	B	A	C
Part Geometry	D	D	C	A	B
Multi-Piece Molds	C	C	C	B+	B+
Durability	C	B-	D+	A-	A-
Longevity	B	B+	C-	A	A
Mold Modifications	B-	B-	C	A	A
Mold Wall Uniformity	A	A	A	B	A
Heat Transfer	B	D	B	A	B+
Mold Wall Corrosion	D	A-	A-	A-	A
Mold Wall Shot Peen	F	F	B	A	A-
Mold Wall Texture	D	F	D	A	D
Dimensional Accuracy	C	C	C	B+	A
Multiple Molds	D	D	D	A	A
Patterns/Model	N/A	N/A	N/A	A	C

MOLD WALL & HEAT TRANSFER

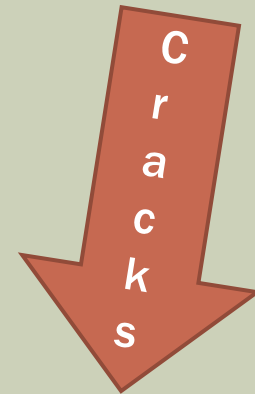
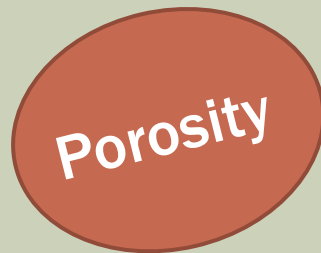


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Medium Molds	B	B	B	A	A
Large Molds	A	A	A	A	B
Extra Large Molds	A	A	B	A	C
Part Geometry	D	D	C	A	B
Multi-Piece Molds	C	C	C	B+	B+
Durability	C	B-	D+	A-	A-
Longevity	B	B+	C-	A	A
Mold Modifications	B-	B-	C	A	A
Mold Wall Uniformity	A	A	A	B	A
Heat Transfer	B	D	B	A	B+
Mold Wall Corrosion	D	A-	A-	A-	A
Mold Wall Shot Peen	F	F	B	A	A-
Mold Wall Texture	D	F	D	A	D
Dimensional Accuracy	C	C	C	B+	A
Multiple Molds	D	D	D	A	A
Patterns/Model	N/A	N/A	N/A	A	C

MOLD WALL SURFACE

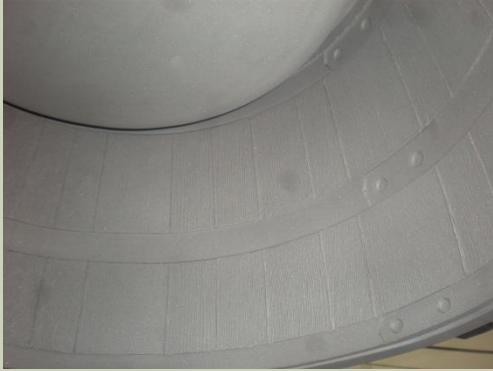
Non Conforming Surfaces



Corrosion



MOLD WALL SURFACE



Wood Grain



**DMC Texture
Ball**



Wicker



Stone/Rock

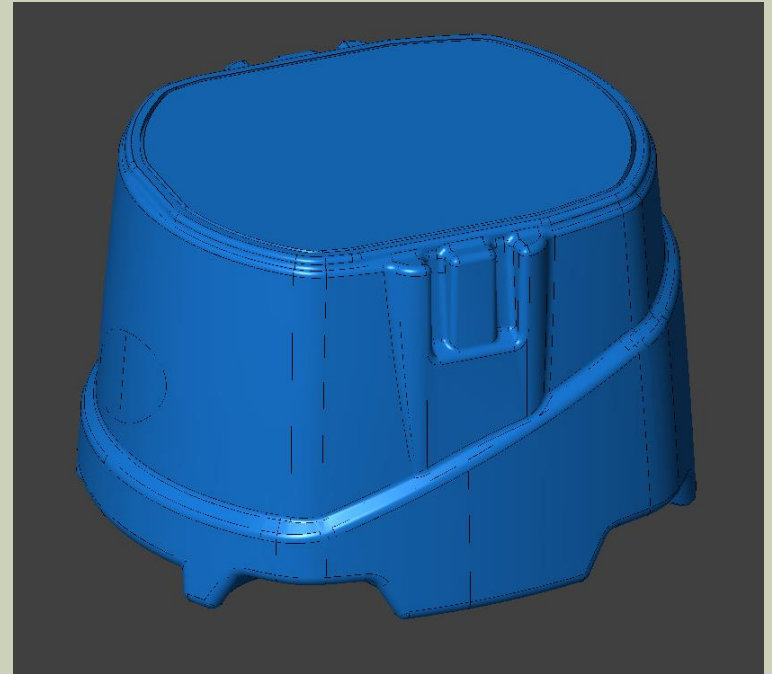
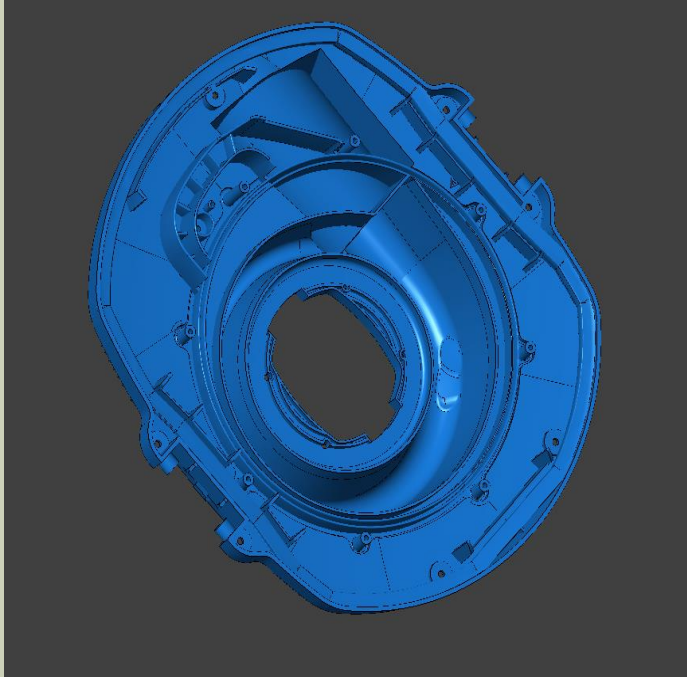


Terracotta

CRITERIA CHART

Criteria	Fabricated Mild Steel	Fabricated Stainless Steel	Fabricated Aluminum	Sandcasting	CNC Machined
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Small Molds	C-	C-	C-	A	A
Medium Molds	B	B	B	A	A
Large Molds	A	A	A	A	B
Extra Large Molds	A	A	B	A	C
Part Geometry	D	D	C	A	B
Multi-Piece Molds	C	C	C	B+	B+
Durability	C	B-	D+	A-	A-
Longevity	B	B+	C-	A	A
Mold Modifications	B-	B-	C	A	A
Mold Wall Uniformity	A	A	A	B	A
Heat Transfer	B	D	B	A	B+
Mold Wall Corrosion	D	A-	A-	A-	A
Mold Wall Shot Peen	F	F	B	A	A-
Mold Wall Texture	D	F	D	A	D
Dimensional Accuracy	C	C	C	B+	A
Multiple Molds	D	D	D	A	A
Patterns/Model	N/A	N/A	N/A	A	C

DIMENSIONAL ACCURACY



**Injection molded lid to fit a Rotationally
molded drum**

PATTERNS/ MODELS



- Many still require patterns for formal reviews
- Advancement in CNC has increased demand for site models
- Sand Printing has removed the need for patterns in some cases

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Medium Molds	B	B	B	A	A
Large Molds	A	A	A	A	B
Extra Large Molds	A	A	B	A	C
Part Geometry	D	D	C	A	B
Multi-Piece Molds	C	C	C	B+	B+
Durability	C	B-	D+	A-	A-
Longevity	B	B+	C-	A	A
Mold Modifications	B-	B-	C	A	A
Mold Wall Uniformity	A	A	A	B	A
Heat Transfer	B	D	B	A	B+
Mold Wall Corrosion	D	A-	A-	A-	A
Mold Wall Shot Peen	F	F	B	A	A-
Mold Wall Texture	D	F	D	A	D
Dimensional Accuracy	C	C	C	B+	A
Multiple Molds	D	D	D	A	A
Patterns/Model	N/A	N/A	N/A	A	C

CONCLUSION

- Determining the mold type you need should not be determined by one set of criteria
- It is not necessarily accurate to determine one type of mold as “better” than another without reviewing the criteria under which it is being determined
- All mold types will work and endure under the right criteria
- Mold technology is advancing and with that criteria is expanding

THANK YOU!



ENJOY THE SHOW AND
VISIT US AT BOOTH 30