



News & Views from Hi-Tech Seals
Vol. 39 | March 2015

Plastic Shape vs Plastic Resin Properties

The Influence of Processing Method on the Implementation of a Plastic Component

Considering there are so many different materials, manufacturers, and trade names, confusion around plastics is understandable. The fact that all these plastics can be processed in different ways resulting in different physical properties can add to this confusion. So, when it comes to understanding plastic property differences the question arises, should we care?

Many Industries are growing, evolving and relying heavily on material specifications to ensure consistency, reliability, and most importantly safety. If you are responsible for the design, engineering, installation, use of, or the purchasing of a plastic component, you should consider the following.

When engineers are writing material specifications, too often they do not specify the origin of the mechanical property call outs. Often times resin properties are specified, yet the finished part is to be machined from a stock shape. If not clearly defined, this leaves material suppliers confused and often unable to certify their products. At best, perhaps a supplier will certify their material with deviations. Working through these deviations wastes time and money.

When writing a material specification, consideration into how the finished component will be sourced must be taken into account. Will initial plastic pieces be injection molded? Perhaps lower volumes of follow up pieces will require machining from a shape?

The processing method for the desired plastic is often driven by the size of the component required, or even by the volume of parts required. Injection molding a component is used when extremely high volumes of finished parts are required. Machined parts from stock shapes are required for much smaller volume requirements where the cost of a mold is not practical. The decision between using extruded shapes and compression moulded shapes is often based on the cross-section or size of the finished part. A clear definition of the origin of the mechanical properties on the material specification is critical to eliminate any certification confusion.

Should we care about plastic shape versus plastic resin properties? There can be significant differences in plastic mechanical properties depending on the processing method utilized. To ensure the material meets material specification, and also meets the demands of the application, the simple answer is yes, we need to care.



MDI Polyurethane

New Materials

Hi-Tech Seals' cast urethane division in Winnipeg is excited to introduce a new family of materials based on MDI Polyurethane processing. The addition of these new formulations will greatly enhance our material offering and provide many benefits to our customers' applications. The improved polyurethane will be available in 60A to 90A hardness and will offer enhanced characteristics, including:

- Greater abrasion resistance
- Increased dynamic resilience
- Withstand higher impacts
- Hydrolysis resistant
- UV stability
- Environmentally friendly, in comparison to TDI materials

Hi-Tech Seals is currently investing in an automated process equipment that will contribute to greater control, consistency and quality of these materials. This equipment will provide a safer working environment for our valued employees.

To learn more about MDI Polyurethane materials, contact a Hi-Tech Seals' Representative.



Chicago Rawhide CR Oil Seals

Now Available

Hi-Tech Seals is now an authorized distributor of SKF's Chicago Rawhide CR Oil Seals within Canada. To learn more about CR Oil Seals, speak to a Hi-Tech Seals' representative.

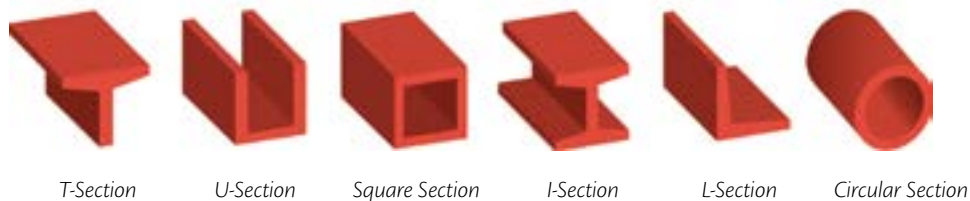
Technically Speaking

Extrusion Moulding

This edition of Technically Speaking will continue with the last installment in a six part series on moulding techniques. Previous editions have introduced five different types of moulding techniques, and covered compression, injection, cast and transfer moulding. This installment will discuss extrusion moulding.

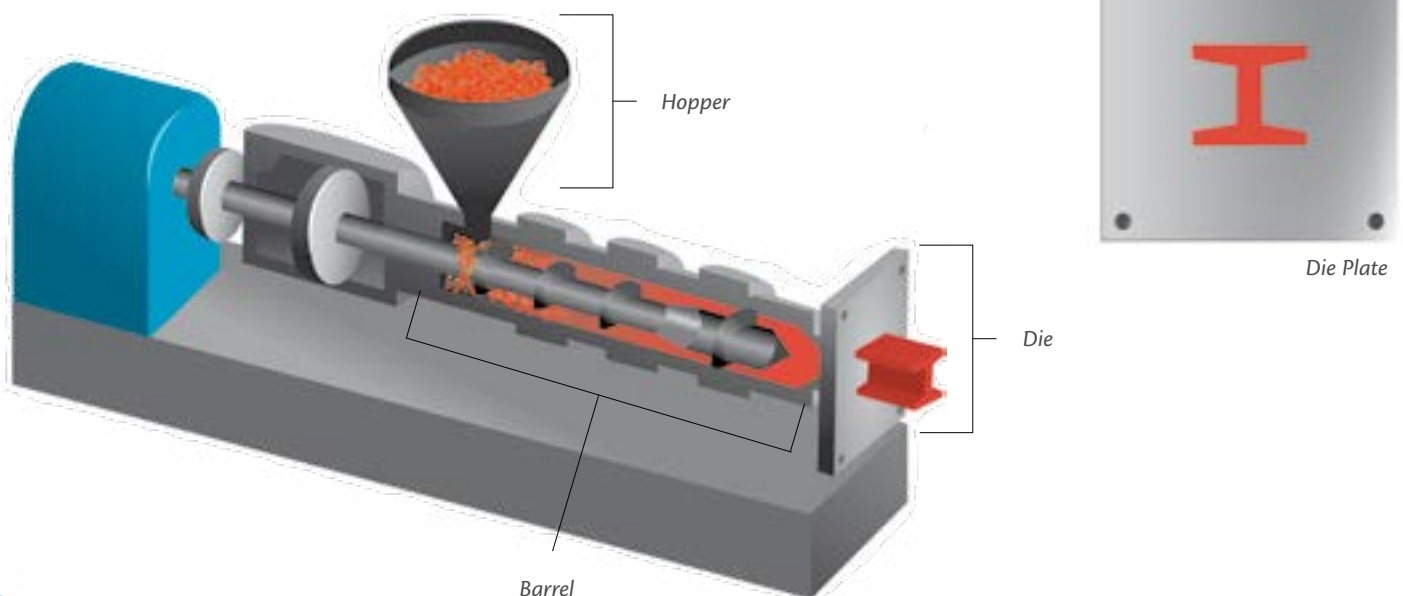
Extrusion moulding is the least complex of the moulding techniques. Similarly to injection moulding, extrusion moulding starts by feeding plastic or rubber granule through a hopper into a barrel. A rotating screw carries the material through the barrel with increasing pressure and temperature. Once the molten material reaches the die plate, it is forced through the opening, forming a long tube like strip of the profile.

Extrusion moulding can produce a variety of profiles, including:



Unlike injection moulding, the rubber compound is not cured after being forced through the die. Extrusion moulded parts are laid out on a circular or long tray and loaded into an autoclave. Under heat and pressure the material cures. For lengthy extruded parts a salt bath curing system can be used. Curing processes may vary dependent on the quantity and profile of the part. After the curing process is complete the extruded strips are further processed, cut to the appropriate length and ready for use.

For more information on extrusion moulding contact a Hi-Tech Seals' representative.



Hi-Tech Gaskets

Now Hi-Tech Seals' Gasket Division

We are pleased to announce that Hi-Tech Seals' subsidiary, Hi-Tech Gaskets, has merged with Hi-Tech Seals. Hi-Tech Gaskets will be known as Hi-Tech Seals' Gasket Division.

Hi-Tech Gaskets would like to thank all our customers for their continued business and support over the years. We look forward to providing you with the same high quality product and customer service as Hi-Tech Seals' Gasket Division.

Information regarding Hi-Tech Gaskets' products and services are available online at www.hitechseals.com. For more information on the merger contact a Hi-Tech Seals' representative.



Toolbox Gasket Packs

Available at Hi-Tech Seals

Hi-Tech Seals Gasket Division now carries toolbox gasket packs. Toolbox gasket packs are made up of various materials and thickness for a wide applications. Whether in the shop, or on the job site, the materials can be hand cut into replacement gaskets.

Materials	Color	Qty
1/16" Red Rubber	Red	2
1/8" Red Rubber	Red	2
1/16" Cork/Neoprene Blend	Tan	2
1/16" Vegetable Fiber	Brown/Tan	2
1/16" Neoprene 60 Durometer	Black	2
1/8" Neoprene 60 Durometer	Black	2
1/16" BA-U Non-Asbestos	Blue	2
1/8" BA-U Non-Asbestos	Blue	2



Toolbox Gasket Packs are available in two sizes, 6" x 6" and 12" x 12". Custom toolbox gasket packs are available upon request.

Tradeshows & Events

Visit the Hi-Tech Seals team at one of the tradeshows we will be exhibiting at this year.

Offshore Technology Conference	Houston, TX	May 4 – 7, 2015	Booth 7543
Global Petroleum Show	Calgary, AB	June 9 – 11, 2015	Booth 4265



If you are unable to make it to one of the tradeshow or are interested in a specific training session, Hi-Tech Seals provides Lunch & Learns for a wide variety of industries. Our engineer and customer service team can prepare a custom lecture based on the specific needs of each customer. Hi-Tech Seals' lectures can be presented to any size group and can vary in length depending on the material being covered and the time allotted by the customer. As an added bonus, one of Hi-Tech Seals' technical sales representative will treat all who attend the training to lunch.

For full event details visit us online at www.hitechseals.com/events.asp.

Congratulations!

Said Ammar

Hi-Tech Seals' would like to congratulate Said Ammar for attaining his P.Eng. designation. Said has been an important part of Hi-Tech Seals Engineering department for over 8 years.



Milestones

We are pleased to share with you employees that have achieved milestones in recent months.

Five years of service:

Jeff Croft
Megan Rosich

Ten years of service:

Lisa Patterson

From all of the staff at Hi-Tech Seals, we thank you for your hard work and dedication over the years.



Hi-Tech Seals' Word Search

Complete the word search below and be entered to win an *Apple TV*.

S E I T R E P O R P Z M A Q G P X Q G X
P X E P T A P Q Y N A Y R T J A F A E X
S X U O H E U K G T A D E B U H S V G Z
Q O I V R M B Q P V M G V A S K N P D P
U W T R I M N R E N J B A A E J O N C V
T P O L Y U R E T H A N E T L M I U I B
E L C H D B B N S R N S D I X Q S J E U
S Q E R S A D R E E N I G N E I U C V A
V F G F O E S N T O V Z N S P W R F A V
J R X Z B F D S N I P D Z Z X O T D L Q
N E G D O H T A S O O R S R I T X Q C E
J S U N R E I I R Z S X E L X N E I O F
R I O W Z O O F G T O R S N P W L G T M
L N U Z Y N S A W B F E E H E B J W U N
A P W G T O G I L V A F S T E U V K A W
L Q O I X N X O C L G L B K T J M J E A
G N I D L U O M S H T G X J C A M N V Y
B E Z E Q T M F J D Y Z K F M V P V X J
S L C K V A A Y K W M N N W I P U X M J
P X J O E C U R A T I V E F A Q F Q G Z

EXTRUSION
TRADESHOW
NEOPRENE
CR OILSEALS
CROFT
ROSICH
PATTERSON
POLYURETHANE
GASKET DIVISION
ENGINEER
AUTOCLAVE
TOOLBOX
MOULDING
CURATIVE
PROPERTIES
RESIN

Please fax your responses to 780.409.9149 by April 15th, 2015.

Name: _____

Company: _____

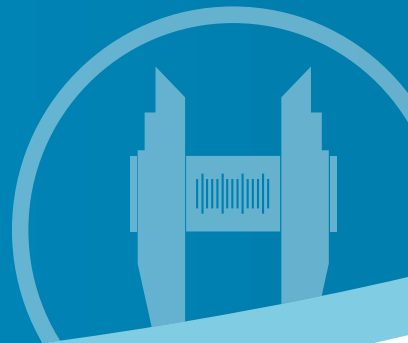
Day Time Phone #: _____

Congratulations to last edition's word search winner, Robert Harris!





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