Formech
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Webbing - Issue 2

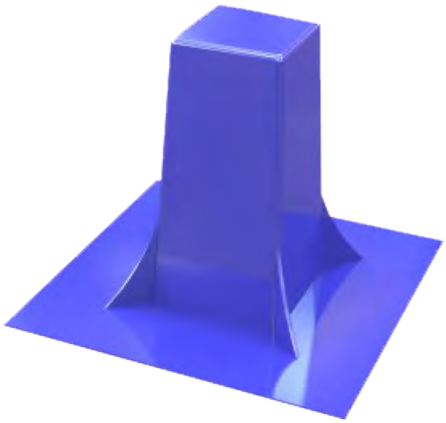
June 2015

Welcome to 'Formech Technical Notes', a quaterly publication in which we delve in to the secrets of the 'Dark Art' of vacuum forming for those of you who are new to the process or if you are already a 'Grand Master' just interested in how things are made.

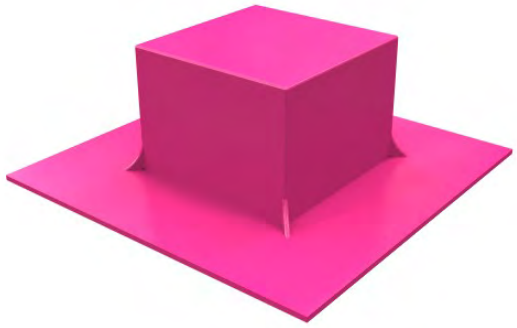
Apart from the tool design, webbing usually occurs when you cannot sufficiently control the flow of the heated sheet as the tool is raised into the sheet. When the vacuum is applied it will always suck down first the part of the sheet that has the least resistance.

If you were to imagine draping a cloth over your tool, rather than a plastic sheet, then the resulting folds and pleats would identify the possible problem areas that your plastic sheet will encounter during the forming process.

Typical webbing problems

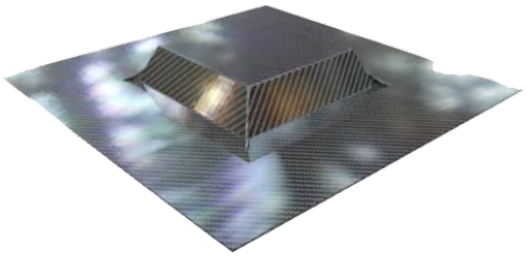


Mould/Tool too high in relation to its base area.



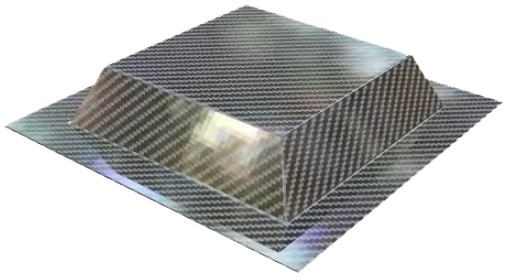
Sharp vertical corners with minimal draught angles.

Deep male moulds in close proximity to each other.

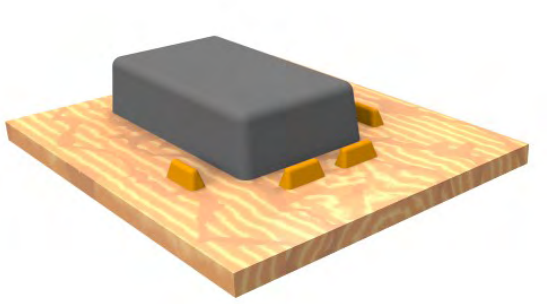


Too much material for the job.

Solutions

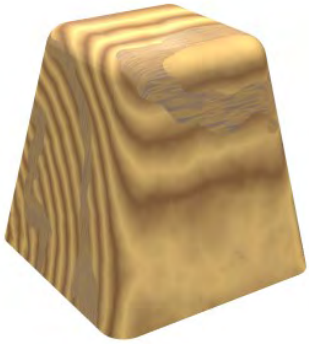


Use a smaller sheet size so that the mould/tool stretches the material more.

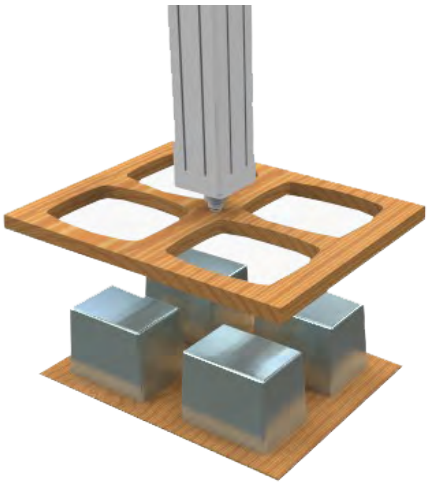


Place angled blocks around the corners to use up the excess material.

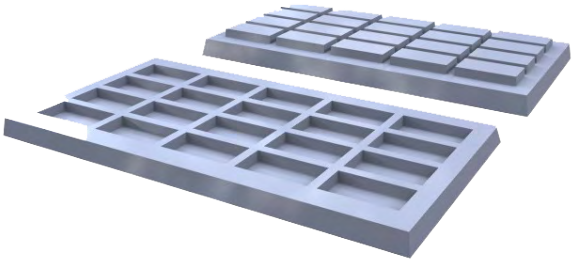
Fix wires or steel blades to the clamping frame to restrict the sheet movement as the tool/mould is raised into the sheet.



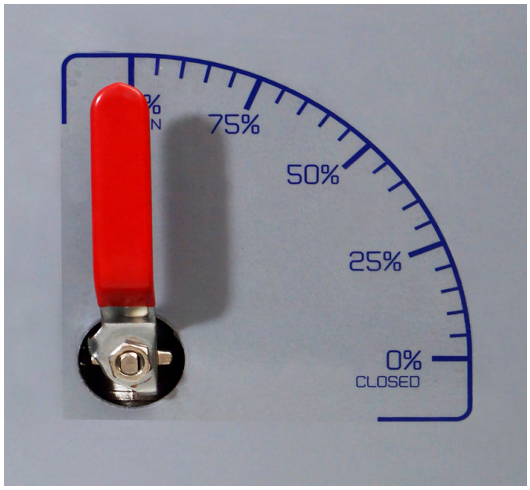
Add draught angle/radius corners to allow the material to flow over the tool/mould/pattern.



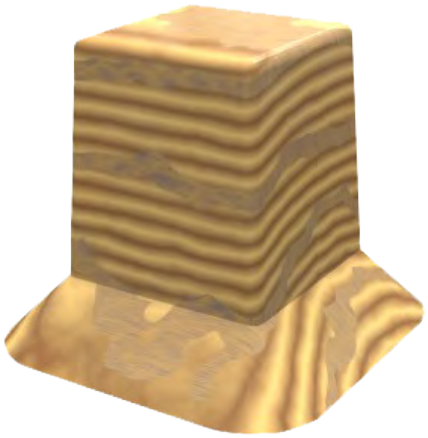
A frame attached to the plug assist that comes down as the table is raised helps to force the material down between the tools and reduce webbing.



Try using a female tool instead of a male tool if webbing occurs between parts of the tool.



Slow vacuum down to gently introduce the vacuum to reduce the chance of webbing.



Increase tool height/add 45 degree apron to tool base to use up excess material that cause webs.

Look out for the next quarterly Technical Notes in October where we will be offering handy hints on Materials and their applications.

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