



Godfrey & Wing Inc.

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## VACUUM IMPREGNATION

### Porosity

Even with great effort and advancement in the metalcasting process porosity, folds, inclusions and gas bubbles remain an inherent byproduct of the casting process. These byproducts, while not detrimental to the structural integrity of a casting, may lead to product failures based upon the component's inability to retain gas or fluids under pressure.

Vacuum impregnation is a method of sealing porous materials without impacting the functional or dimensional characteristics of the material. It has been in commercial use for over 60 years and continues as the preferred method for ensuring pressure tight components in failsafe applications. Aviation, automotive and the oil and gas industries have long used vacuum impregnation to improve the quality of their base castings, conserve resources and reduce scrap.

### The vacuum impregnation process, in its simplest form, is made up of four 'key' characteristics

- Evacuate porosity with deep vacuum
- Fill porosity by flooding the part with sealant and applying pressure
- Remove residual sealant from the part
- Catalyze (change to solid) sealant inside porosity

### Three factors that impact the effectiveness of these above characteristics are:

- Impregnation Process Type
- Manufacturing System
- Impregnation Sealant

With over 60 years of experience in vacuum impregnation Godfrey & Wing guides our Customers through the development of a successful impregnation program. Contact us today for information related to your specific application.