

Repair technologies	+	-	Aspect of the injected part without graining	Aspect of the injected part with graining	Conclusions for non grained part	Conclusions for grained part
<b>Arc Wire spray</b>	No effect on base metal properties	Impossible to machine for 10 mm defect size (no metallurgical bonding between weld metal and base metal)	Not tested	Not tested	- Non valid technology for defect of few mm - Interesting process for very small defect? Must be confirmed	- Non valid technology for defect of few mm - Interesting process for very small defect? Must be confirmed
<b>HVOF</b>	No effect on base metal properties	Impossible to machine or 10 mm defect size (no metallurgical bonding between weld metal and base metal)	Not tested	Not tested	- Non valid technology for defect of few mm - Interesting process for very small defect? Must be confirmed	- Non valid technology for defect of few mm - Interesting process for very small defect? Must be confirmed
<b>TIG AC</b>	- Easy to perform - Can be a long operation if we repeat welding + machining	- Requires preheating at roughly 100°C - Loss of base metal mechanical properties due to preheating	- 5XXX: few overthicknesses on the part due to small cracks on the mould - 4145: visible under thickness along the weld on the part	Marks on the injected part	- 5XXX can be used with repeat welding+machining to delete cracks - With 4145 can appear a difference of colour on the injected part	Non valid technology for grained part: all the filler materials present marks on the part
<b>TIG DC</b>	- Requires trained welder (very short distance between weld pool and electrode 1mm) - Lower deposition rate, which can improve the surface quality	- Loss of base metal mechanical properties due to high heat input	- 4145 induces no visible mark with polishing more than 320. - 5XXX: few overthicknesses on the part due to small cracks on the mould	Marks on the injected part	- 5XXX can be used with repeat welding+machining to delete cracks - 4145 can be used with sufficient polishing (>320)	Non valid technology for grained part: all the filler materials present marks on the part
<b>Mechanical repair</b>	- Good bonding between insert and mould	- Loss of base metal mechanical properties due to heating of the mould - Requires new metal	Not tested	No marks on the injected part	Can be used	Can be used

Non OK
Limit
OK