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Date:	29 March 2009	Refer to:	L0900058-v1
Subject:	Request for waiver on glass shot blasted parts (BS/FM stay brackets)		
To:	Vacuum Review Board (VRB)		
From:	Dennis Coyne		

Some aluminum parts fabricated by our UK colleagues have been glass shot blasted. Please consider their request for waiver (below) for these parts. The glass beads have a fairly high percentage of sodium oxide, but likely it is well bound and likely there is not a lot of glass bead embedded into the surface. If not acceptable as is, can you suggest a means to redeem the parts, for example electro-polishing or acid etching the surface?

Dennis Coyne

----- Original Message -----

Subject:BS/FM stay brackets (glass shot blasted)

Date:Thu, 19 Mar 2009 14:38:38 -0000

From:ODell, J (Joe) <joe.odell@stfc.ac.uk>

To:Dennis Coyne <coyne@ligo.caltech.edu>

CC:Greenhalgh, RJS (Justin) <justin.greenhalgh@stfc.ac.uk>

Hi Dennis,

We recently received a few of the non-OJEU components for the BS/FM (the stays). Among these components, were some brackets, of fairly complex geometry that had been glass shot blasted. In the summary of the LIGO specifications that went out for manufacture, the part of the spec that forbids sand/grit blasting had been omitted (this spec was specific to this particular batch, where we used a different manufacturing company). All other aspects of the spec (regarding coolants, materials etc) have been adhered to. Our initial reaction was to either scrap the parts (probably ~4k worth), or to try to remove the surface material (difficult because of the complexity) but we felt it would be a good idea to run this past you first, and get your opinion. The spec for the glass shot is attached in this email. I can also send photos if required.

Regards

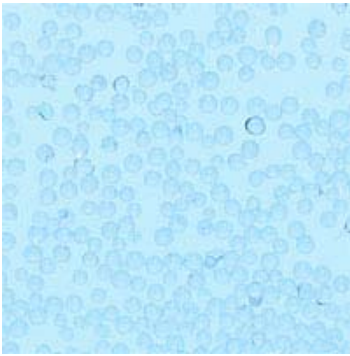
Joe O'Dell

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Wheelabrator Group glass beads and glass grit are manufactured in the UK under strict quality control criteria. Glass beads clean and remove surface deposits with a peening action leaving a lustrous surface finish. They are ideal for use on both ferrous and non ferrous surfaces and for use in both wet and dry blast machines. All Wheelabrator Group glass products contain no free silica.

Vaquashene Glass Beads – premium quality glass beads manufactured to, and conform with all major aerospace specifications. With over 10 different grades to choose from Vaquashene will clean, texture, peen and remove surface deposits with minimal damage to the substrate, and impart a variety of surface finishes.

Physical Data	
Type	Vaquasheen
Colour	Clear
Specific Gravity	2.40 – 2.6
Bulk Density g/cc	1.5g/cc
Hardness Rockwell C Scale	47-50
Typical Chemical Analysis	
	%
SiO ₂	72.5
CaO	9.75
MgO	3.3
Na ₂ O	13.7
K ₂ O	0.11
Al ₂ O ₃	0.4
Fe ₂ O ₃	0.25
Free iron	<0.10
Percentage rounds dependent on size	70 – 80%