

# NickWrightConsulting

## *Consultation*

**TO** : **Dave Braithwaite, Steel Studio International**  
**FROM** : **Nick Wright**  
**DATE** : **25<sup>th</sup> February 2009**  
**SUBJECT** : **Balustrade Testing Department of Foreign Affairs.**

Dear Dave

The following was carried out in accordance with instructions:

Sand bag impact test of 400 J to balustrade panel identified by yourself.

Sand bag was overweight at 31 kg and dropped from a height of not less than 1.36 metres. Impact energy therefore exceeded 413 joules.

Impacts were made to the centre of the panel between the two wires (two impacts) to the bottom left corner on the bolted fitting, and as close to the top left fitting as possible. It was impossible to get as close to the top left fitting as the bottom fitting because the hand rail is in the way.

All four tests were completed without breaking the glass. The stainless steel brackets were permanently deformed however. Hand rail, stanchion and steel wires remained undamaged.

The isolation material between the stainless steel brackets and the glass is particularly thick and effective at preventing glass to metal contact. The final installation must have the same or better isolation.

All four impacts were carried out on the same 8 mm toughened safety glass panel.

Please note that should one of these glass panels fail due to accidental damage, there is nothing to prevent the glass from falling to the floor below.

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Do not hesitate to contact me if you need more information or clarification.



President and Member South African Glass Institute  
Competent Person Glazing

Image 1 shows swing bag position prior to the first impact.



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Image 2 shows fixing and bracket detail after the first impact. Note the size of the isolation.



Image 3 shows the position of the swing bag for the impact next to the bottom corner fixing.



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Image 4 shows the bent bracket after the impact on the bottom corner.



Image 5 shows position of the swing bag for the top corner impact. Note the position of the hand rail which precludes lifting the bag further and the top wire which will take some of the impact.



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Image 6 shows the balustrade after the final test.

