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Major

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Coffin Deflection Test

Tuesday, August 11, 2009

Purpose

To test the amount of deflection that a Corrugated Board Coffin would undergo, with a static load of 130 Kg.

Method

1. Place one plank of wood at each end of the coffin as shown in figure 1.
2. Locate 3 points underneath the coffin to measure the deflection. Refer to figure 1 for location of points.
3. Measure the deflection at the 3 points in order to obtain a base line.
4. Fill the coffin with 130 Kg evenly distributed (static load).
5. Maintain for 30 minutes
6. Measure the maximum deflection of the coffin base at the 3 points
7. Transport the coffin with load to Necropolis cool room
8. Place the coffin and the load support from both end in the cool room maintained at $7 \pm 2^{\circ}\text{C}$ for a period of 72 hours
9. Measure the deflection of the coffin base.

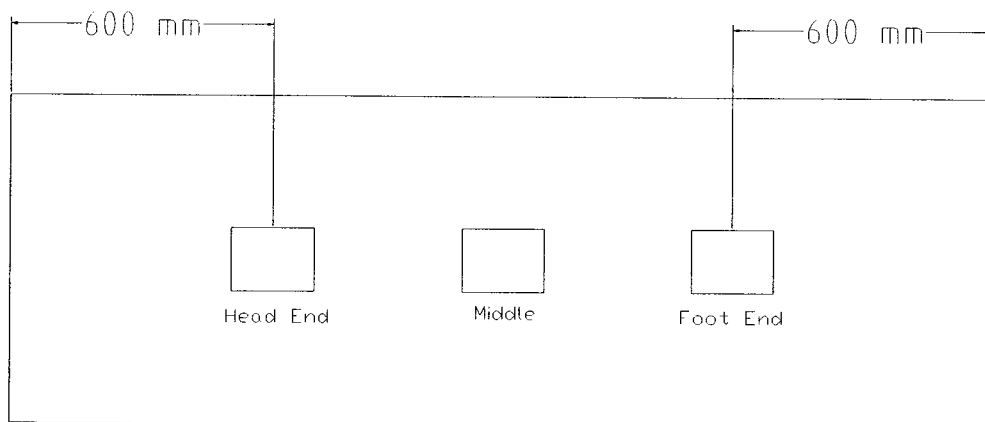


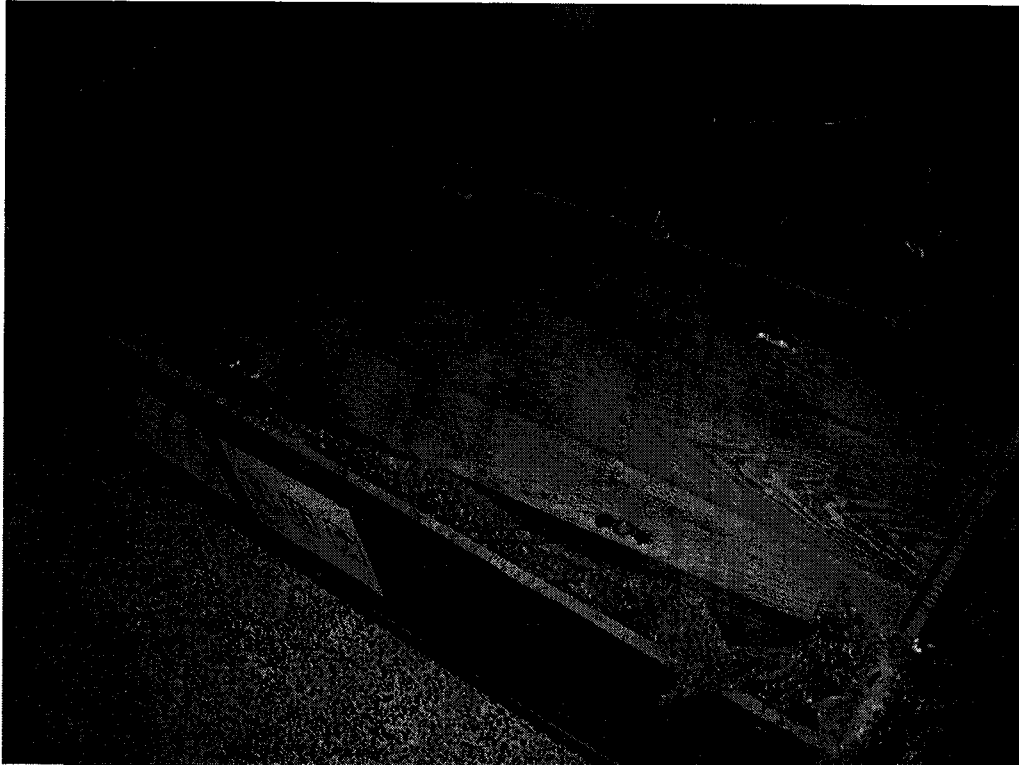
Figure 1: - Test Setup

Result

To obtain the deflection readings an inside micrometer was used.

	Head End	Middle	Foot End
Unloaded	84.0 mm	84.1 mm	85.5 mm
130.5 Kg (Immediately)	82.6 mm	81.5 mm	83.8 mm
130.5 Kg (After 30 mins)	82.5 mm	81.4 mm	83.5 mm
130.5 Kg (After 72 hrs in cool room)	81.9 mm	80.9 mm	83.1 mm
Deflection after 72 hrs in cool room	0.6 mm	0.5 mm	0.4 mm
Total Deflection	2.1 mm	3.2 mm	2.4 mm

Table 1: - Data Collection



As you can see from table 1, the maximum deflection was 3.2 mm and as expected it was in the middle of the coffin. Also after being in the cool room for about 72 hours, there was no apparent moisture build up on the surface of the coffin.

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Coffin Handle Test

Wednesday, August 20, 2009

Purpose

To test whether the handles of the Corrugated Board Coffin would withstand the static load of 130 Kg.

Method

1. Place blocks of wood under each handle so that the coffin is slightly raised above an even surface. (Note: - 6 handles, 3 on each side)
2. Fill the coffin with 130 Kg evenly distributed (static load).
3. Maintain for 6 hours
4. After six hours, observe to see whether there was any deformation on the handles.

Result

After the coffin had been loaded with 130 Kg (static load), which was evenly distributed throughout the coffin for a period of 6 hours, there appeared to be no apparent damage to the handles.

Conclusion


Based on the above tests, the following conclusions can be drawn:

- This testing was completed without reference to any particular Australian standard. ACCA "Guidelines for the use of cardboard and other receptacles" was used as a guideline.
- Maximum deflection with 130kg static evenly distributed load is 3.2 mm which is in the middle of the coffin
- After being loaded with 130 kg static evenly distributed load and in the cool room for about 72 hours, the coffin only deflected maximum 0.6mm further than before the cool room conditioning. There was no apparent moisture build up on the surface of the coffin after 72 hours cool room conditioning.
- After the coffin was loaded with 130 kg static evenly distributed load, and only supported by its handles for a period of 6 hours, there was no apparent damage to the handles.

Signatory



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