

Appendix 1

The principal prototype head restraint dimensions are shown in **Figure 1-1**.

The frame was constructed from a steel box section of 19 mm section for the lighter prototype (total mass 4.3 kg) and 25 mm section for the heavier prototype (total mass 7.8 kg). The head restraint cushion was constructed from a 12 mm plywood backing covered in a 20 mm layer of stiff Ethafoam (Dow Chemical Company), and this was covered in a 50 mm layer of soft foam (Kayflex V60F); see **Figure 1-2**.

Appendix 2

The SAE J211 filter classes used for the sensor time histories are given in **Table 1-1**.

Table 1-1: Filter classes used in data postprocessing.

Head acceleration	CFC 1000
T1 acceleration	CFC 60
Upper-neck shear force	CFC 1000
Upper-neck bending moment	CFC 600