S2.9 Vibration Isolation Requirements

All vibration isolation equipment shall be selected in accordance with this Schedule.

Item	Equipment	Vibration Isolation Requirements
1	Transformers 66 kV	Double deflection neoprene isolators of min. 10mm static deflection. There shall be no rigid ties to the structure. Suitable baseframe shall be provided for point mounting of isolators.
2	All HT and LT distribution bards	One layer if 8mm min. thick neoprene waffle pad at all supports (40 durometer).
3	Generator sets	Unhoused type steel springs in series with 2 layers of 8mm thick, 40 durometer neoprene waffle pads and 1mm thick steel shim, of 64mm minimum total static deflection. Steel base rails and outriggers shall be provided for spring mounting. Baseframe to be sized to support the first elbow on all connecting pipework. Floor supported elbows shall be isolated with similar type support of same static deflection as for the generator sets. Flexible steel bellows at exhaust pipe connections with genset. There shall be no rigid ties to the structure, all connections shall be looped or flexible. All pipework within the plantroom shall be provided with 25mm minimum static deflection steel springs in series with min. 5mm deflection neoprene in shear hangers or supports.
4	Exhaust pipes	Unhoused type steel springs in series with 2 layers of 8mm thick, 40 durometer neoprene waffle pads and 1mm thick steel shim, or springs in series with neoprene in shear hangers of 50mm minimum total static deflection. All pipes are to be externally cladded or lagged. Flexible steel bellows are required at exhaust outlets.
5	All horizontal pipework beyond spring hangers connected to gensets equipment rooms	Double deflection neoprene in shear hangers or supports of minimum 6mm total static deflection. All isolator metal springs and fittings located outdoors are to be galvanized or epoxy coated.
6	All vertical riser and dropper pipework	Resilient pipe guides or mounts with neoprene in shear mounts in angle or channel steel frames of minimum 5mm static deflection
7	All pipework unless otherwise specified	One layer 8mm thick neoprene waffle pad sleeve between pipe and clamp or supports

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Item	Equipment	Vibration Isolation Requirements
8	Penetrations of all pipework and ducts	One layer 25mm thick 120 kg/cu.m. fibreglass in 0.8mm sheet steel sleeve with nom. 25mm clearance and caulked from both sides with a non-setting resilient caulking compound e.g. Bostik Fireban or equivalent. For exhaust pipes, high temperature rockwool and caulking compound shall be used.
9	Fuel transfer pumps	Unhoused type steel springs in series with 4 layers of 8mm thick, 40 durometer neoprene waffle pads interspace with 2mm thick steel shims – 25mm total static deflection. Inertia block min. 2:1 ratio required. Inertia block shall be sized to obtain the min. specified inertia block/equipment mass ratio. Thickness of the inertia block shall be 150mm min. and need not exceed 300mm. The inertia blocks shall support the pipework up to and including the first elbows before the vertical risers. There shall be no rigid ties to the structure, all connections shall be looped or flexible. All first 3 hangers or hangers within 10m of respective units: 12mm min. total static deflection steel springs in series with neoprene hangers or supports.

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