

GATEMASTER GATE SAFETY RESTRAINER TEST REPORT

This test is compiled in accord with the specifications set out in the Gatemaster gate restrainer strength testing procedure, as detailed below.

Gate restrainer strength testing - GM F242/2020

Following recent safety issues, it is important to ensure that hinges used on metal gates have a backup device that will prevent the gate falling over in the event of hinge failure. This device needs to be sufficiently strong to withstand the forces imposed by the weight and dimensions of the gate in the event of hinge failure.

The procedure described in this document is solely for testing the strength before permanent failure of a safety restraint device. Tests for longevity, corrosion resistance and other considerations are documented in other GM test procedures.

An outline of the test procedure is as follows;

A gate is manufactured from 60 x 40 x 2mm rolled steel box section with mitred and welded corners to an overall dimension of 2500mm wide x 800mm high. The hinges are attached to the gate according to the same method used in production at 650mm centres. The hinges are similarly fixed to a gate post of 60mm x 60mm rolled steel box section which is rigidly supported along its length to prevent any movement or bending of the gate post. The safety restraint device is attached to the gate either directly above or directly below the top hinge. The top hinge is then disabled either by manually breaking the hinge or by removing a component that connects the gate and post fixings. The gate is then loaded with weights evenly along its width as described in the detailed procedure below.

Failure is deemed to have occurred when one or more of the device components deform or break so the device is no longer supporting the gate.

Detailed test procedure

- 1. Fix hinges to test gate and tighten securely. Hinges must be exactly as ongoing production manufacture.*
- 2. Fit safety restraining device to the gate according to the same method used in production. Minimum distance from gate restrainer to bottom hinge is 800mm. The restrainer must be fitted at the top of the gate directly above or below the top hinge.*

3. *Disable the top hinge by manually cutting or removing components, so the hinge is physically detached and no longer supporting the gate. For safety purposes ensure the gate is separately propped up during this process.*
4. *Fix hinge identification label to the gate for identification in recording images*
5. *With gate in closed position, load gate evenly with 100KG. Inspect restraining device for deformation. Record results with photo.*
6. *Repeat steps 4 and 5 adding load in 20KG increments until the restraining device permanently deforms. Record results with photo at each 20KG increase in load.*

Test Results

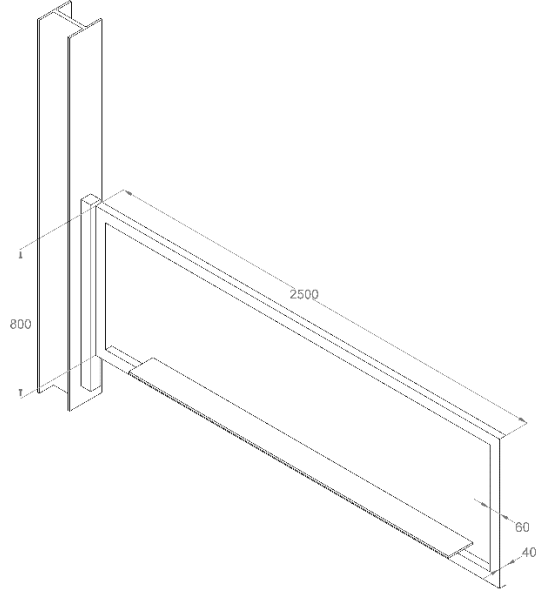
Restraining Device Variation: **GRS03 – Gate Restrainer, stainless steel, 3mm**
 Maximum Gate Weight: 260kg
 Recommended Maximum Gate Width: 2500mm
**See loading chart at end of document for a detailed width v weight comparison*

Important: *This product is designed to prevent the gate falling over to one side, not to prevent the gate hitting the ground. If the dimension from the bottom of the gate to the ground is longer than the restraining device, this test is not applicable. The restrainer is not designed to replace the top hinge and carry the full weight. For test purposes, the gate in this test was loaded once the restrainer was already at its maximum length.*

Materials	
Restrainer wire thickness	3mm
Restrainer wire material	316 stainless steel
Restrainer plate thickness	3mm
Restrainer plate material	304 stainless steel
Restrainer plate fixing type	Crimped copper ferrule
Restrainer hole size	13mm

Test Notes

Gate Setup



Gate weight before loading	30kg
Box section wall thickness	2mm
Gate width	2500mm
Gate height	800mm

Maximum weight – 260KG



Notes

Restrainer failed at 280kg, due to failure of restraining plate end fixing. Bowing of restraining plates evident. Restrainer wire intact.

