

DMM Mamba test report

A DMM Mamba karabiner plus captive sling was sent to the Technical Committee for testing. The unit had been used as in situ protection at a climbing wall, and had been replaced as part of a maintenance schedule by Bendcrete, the wall manufacturer and service agent.

Details were not supplied about how long the unit had been in service, but batch numbers were recorded on the karabiner (AFH) and the sling (AAB). The closed gate strength of the unit when new should be a minimum of 23kN as stated by the manufacturer.



A brief visual inspection of the karabiner found that it was fully functional, but with some wear on the body of the karabiner. This wear was probably caused by rubbing against the climbing wall surface, but was not in a critical area. The sling was quite badly worn around the captive connection point, again most likely from contact with the wall surface.



The unit was tested complete at Lyon Equipment, using their tensile test apparatus. Test speed was 50 mm/min using 12mm diameter pins set at 90° to each other. The sling broke at the captive end at 12kN breaking load. The karabiner remains fully

functional with a smooth gate action, and even after testing is likely to remain suitable to use (not that we are recommending this!)



In real life, most climbing wall falls are likely to be well below this 12kN breaking load – in the range of 3-7kN on the top runner. It is possible, however, to exceed a 12kN force on the top runner, especially if using an autolock belay device combined with a high impact force rope; or if a badly designed wall or poor route-setting incorporate hard friction into the rope path. Skipping clips and stretching to clip are both user practices which can greatly increase fall factors and hence top runner forces. It is also worth noting that in a worst case scenario, these high impact forces may also result in gate open failures of karabiners at around 7-10 kN.

In conclusion, the sling component of this DMM Mamba was found to be worn, to the extent that it may have failed in a worst case climbing wall fall. Regular inspection and, where necessary, replacement of protection points is an important part of any climbing wall safety regime. This test amply demonstrates how textile components can be affected greatly by wear compared to metal components which are often far longer lasting.