

Dimensional Variation for MarshMellow™ Springs

We are often asked about the tolerances for MarshMellow springs. As a result of the processes used to manufacture and test them, MarshMellow springs regularly display significant differences from the published catalog dimensions. One part out of every cure is tested to insure that it meets our specifications. Once a rubber part is deflected in the test it will take on what is called "permanent set" which means it will no longer return to its "as molded" condition. Depending on how many parts are cured at one time this can mean that as many as 50% of the parts will be shorter and larger in diameter than the catalog shows. We even have some parts where there is only one part per cure, but this is not normally an industrial part.

In addition, a molded rubber and fabric piece will have some basic dimensional differences depending on many environmental issues including the temperature, humidity and other factors involved in its curing and cutting. This is why we do not accept or reject a MarshMellow spring based solely on dimensions.

At least one part from every cure is dimensionally inspected and tested for conformance to load deflection. Dimensions checked should include:

I.D., O.D., taper angle and length. The records for this inspection include the part and serial number.

This part is then sent to the appropriate area for a load versus deflection test. In the testing machine, the part is flexed three times to the load and rate listed in the specification. The third compression cycle is then recorded and the load/deflection trace is compared with the specified height range at the load indicated for the test.

Since the real critical factor is that the MarshMellow springs will perform correctly in the application, this is the real "go/no-go" test. Parts meeting the load deflection test specifications will perform as the data in the book shows and are, therefore, accepted for shipment to our customers. In the case where the first part fails the test we test all parts from that cure.

In summary, you can have parts that may appear to be slightly different in height and diameter. While this may cause a concern from your customer, you can assure them that the parts will perform in accordance with the load versus height curves in the book once they are installed and the machine is started.

