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This document is a record of a review of calculations and witnessing of the test of the Boss Frog "Double Maxx" rollbar. The calculations were reviewed prior to, and the test was witnessed on March 31, 2006.

The calculations for the test were based on curb weight of subject vehicle of 2450 lbs. plus 330 lbs. per the SCCA/FIA standard. The force applied was the resultant of the simultaneous load requirement of 7.5 g vertical, 5.5 g front and 1.5 g side load. The calculated resultant force is a 9.4 g equivalent at approximately 12 degrees from centerline of vehicle and approximately 37 degrees from vertical. Load was applied by pulling with a 4" cylinder with a 1½" rod, requiring 2421 PSI hydraulic pressure to generate the force required. The calculations reviewed are correct based on the information provided. Maximum rollbar deformation allowed is 2" per the standard.

The test setup met the intent of the calculations based on the observed measurements. The rollbar to be tested was attached to a reinforced steel test stand with rollbar mounting points duplicating the mounting points in the vehicle the rollbar is designed to fit. The hydraulic force was applied to the cylinder from an electrically driven power unit until the required pressure was attained. A pressure gauge was utilized to determine when the required force was met at 2421 PSI. A maximum pressure of at least 3000PSI was attained during the test, exceeding the required load by nearly 25%.

The results of the test were that the maximum observed deformation of any part of the rollbar was approximately 3/4" along the top of the driver hoop and approximately ¼" along the top of the passenger hoop, both while under load. The rollbar returned to within 3/8" of its original position upon the release of hydraulic pressure.

Based on review of Appendix J, Article 253, Sub-article 8 of the FIA standard provided, it appears that the Boss Frog Double Maxx rollbar meets or exceeds the design verification and testing requirements of the standard for a vehicle of the weight provided. Only these stated calculations, test conditions and results are herein verified.


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March 31, 2006