Tokai Rubber Industries, Ltd. (TRI) (Head office: Komaki City, Aichi Prefecture, President: Yoshiaki Nishimura) has been developing, manufacturing, and selling “seismic vibration control devices” including “TRC Damper,” a vibration control device for wooden buildings, based on the know-how we have been accumulating in developing and manufacturing automotive and industrial parts. Exerting high damping effects with its special viscoelastic rubber, this damper was recently granted a certification regarding the Wall Strength Factor from the Ministry of Land, Infrastructure, Transport, and Tourism (Certification Number: FRM-0372).

The Building Standards Law in Japan stipulates the quantities of bearing walls necessary for wooden housing structures to withstand earthquakes (jolts) and sets the “Wall Strength Factor” as standard values to indicate the performance of bearing walls. In addition to its established reputation in its damping performance, the TRC damper received from the Ministry this time a certification of “Wall Strength Factor 1.3” in the timber framework method. This value can now be used in calculations of wall quantity and allowable stress levels required for three-storied buildings, leading the product to improve its seismic grade under the Housing Quality Assurance Law. Moreover, we will continue to simulate the seismic damping effects of individual buildings with the aim of ensuring the reliability of the TRC Damper further with a synergy of the certification.

We are determined to make effective proposals to our customers through these efforts in order to enhance customer satisfaction. (※3)

---

(※1) Wall Strength Ratio
Installing bracing or plywood can strengthen walls.
The Wall Strength Factor is specified between 0.5 and 5.0 depending on its type under the Building Standards Law.

(※2) Bearing Walls
Walls that have the ability to withstand horizontal loads such as earthquakes.

(※3) For calculations using the Wall Strength Factor, bracing or face bars shall be installed in walls according to the Building Standards Law, Article 46, Section 4, Table 1.
Outline and characteristics of the seismic control system for wooden houses, “TRC damper”

High damping performance
TRC damper is a seismic vibration control device using special viscoelastic rubber that can be installed as a bracing. When an earthquake occurs, this special rubber mounted on the damper can alleviate a seismic jolt to the building by changing shape to convert seismic energy applied to the building to thermal energy. This product can reduce a horizontal displacement by 50% at a maximum in the face of an earthquake measuring the Japanese intensity scale of upper 6 according to one of our simulations.

Long-term stable performance
Viscoelastic rubber used in the TRC damper hardly experiences performance degradation over time, making it possible to deliver stable performance for a long time without any maintenance. In addition, this structure can absorb seismic energy and attenuate shaking, which is highly effective against repeated earthquakes such as aftershocks according to our test results.

Checking the effects with simulations
For client builders, we offer a free “seismic response analysis”—the most accurate analysis in architectural design—so that they can check the effects of introducing the damper.

Applicable in building renovation
TRC damper can be introduced at low costs in building renovation because it can be installed during the bearing wall construction. The product has also obtained a certification in “the Evaluation of Building Disaster Prevention Technologies” from the Japan Building Disaster Prevention Association. (Evaluation Number: DPA-Jyugi-28-1) This makes the construction method eligible for subsidies for earthquake-resistance renovation.

---

Inquiry: Public Relations Office, General Affairs Department  TEL: 0568-77-4222