

# **AWARENESS ABOUT STEEL STRUCTURES INCREASED EVEN FURTHER AFTER EARTHQUAKES**

**"STEEL BUILDINGS PLAY AN INEVITABLE ROLE IN TURKEY'S FUTURE"**

Steel buildings, which have been the primary choice in developed countries and have a wide range of applications, have also gained popularity in Turkey in recent years. Orhan Güner, Chairman of the Board of Directors of Vefa Group, one of Turkey's leading prefabricated building companies, stated that the renewal of structures in the region through steel planning after the recent earthquake disasters has further increased awareness in this field.

Steel structures, heavily favored and widely used in countries like Japan, America, Australia, and England, which are leading nations in modern urbanization, particularly in numerous public buildings, have begun to proliferate and be in demand in Turkey as well.

**Orhan Güner, Chairman of Vefa Group**, who emphasized that the consciousness about building safety has increased in recent years due to earthquakes, and stated that the government's preference for light steel in single-story permanent residences in earthquake-prone areas, as well as the hybrid system where light and structural steel are used together in public buildings such as schools, hospitals, and student dormitories, contributes to this consciousness. Güner stated that steel structures play an inevitable role in Turkey's future.

**ORHAN GÜNER; "THE USAGE OF STEEL STRUCTURE SYSTEMS PARALLEL TO THE LEVEL OF DEVELOPMENT OF COUNTRIES"**

**Orhan Güner, Chairman of Vefa Group's Board of Directors, stated:** "We see that the use of steel structure systems in the world increases parallel to the development levels of countries. This building system is more preferred in societies with a high level of awareness. Japan, Australia, New Zealand, America, England, Canada, and France are among the most important countries that prefer this building system. In Japan, the use of steel structures is in the 80s, in New Zealand in the 70s, in America and Europe in the 40s. In Turkey, the usage rate of steel structures is around 5%."

**ORHAN GÜNER; "IN 20 YEARS, WE BECAME THE 7TH LARGEST STEEL PRODUCER IN THE WORLD"**

**Orhan Güner stated:** "The usage rates of steel in the world have increased 4 times from 1994 to the present day. It is seen in the analysis that it will increase in the coming years. According to the World Steel Association (WSA) data, steel consumption in Turkey reached 29.5 million tons in 2020, and while it was the 17th steel producer in the world in 2000, it became the 7th in the world and the 1st in Europe in 2020."



## **ORHAN GÜNER "TOKİ'S NEARLY 50 THOUSAND STEEL VILLAGE HOUSE PROJECTS CONTRIBUTED TO THE INCREASE OF STEEL AWARENESS IN INDIVIDUAL HOUSING IN TURKEY"**

**Orhan Güner stated:** "Lightweight steel structures have been preferred in both residential and industrial areas worldwide since 1948. In Turkey, we built the first lightweight steel building in 2000. Although the steel structure system is predominantly used in the industrial areas, it has also started to be used in recent years for hospitals and mass housing in the public sector. After the specifications were created following the Elazığ and Malatya earthquakes in 2020, steel structures came to the agenda in Turkey. Initially, with the demand of TOKİ, nearly 50,000 steel village houses were built in different cities of Turkey. After the earthquake on February 6, the lightweight steel structure system became a more prominent issue with its speed and durability. Works on the construction of cities with steel structures continue both in earthquake zones and in other earthquake-prone areas. Currently, the Ministry of Environment, Urbanization and Climate, in cooperation with TOKİ, is continuing these works in different cities." Emphasizing that steel should be more preferred in individual and mass housing, Orhan Güner said, "Turkey has the technology of this system. Thousands of buildings that need to be quickly transformed. The usage of steel structures in our country is about 5% of the total building stock. The majority of these are industrial buildings. Its usage in public and individual housing is almost negligible."

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### **ABOUT STEEL STRUCTURE SYSTEMS**

The steel structure system is a permanent, durable, flexible, and robust industrial building system. It is uniquely designed with architectural and engineering solutions and most of it is produced in a controlled manner in factories. Insulation values for walls and roofs are specially calculated to suit the region's climate. The production processes of these systems are predetermined, a large part of them is produced in a controlled manner in factories, reducing the application time on the field.

- **Resilience Against Earthquakes**

The heavier the total weight of a building, the greater the earthquake force will be. Therefore, buildings in earthquake zones should be constructed with lightweight materials as much as possible. All materials used in the production of lightweight steel buildings are quite light and flexible. Since buildings with this system are much lighter compared to the traditional method, they bear less earthquake load accordingly. Especially in earthquake-prone regions, steel is a life-saving building system with these features. Also, since the application stages on-site are predetermined, there are no deviations due to human factors and initiatives in construction quality.

- **Saving from Speed and Labor Costs**



Since the steel building system is prefabricated, production and assembly processes can be managed in a controlled manner. This system is preferred because it reduces costs to optimum levels. Short assembly time, less labor requirement and three times faster construction compared to reinforced concrete system eliminate unnecessary labor and construction site costs. Moreover, the on-site labor in steel buildings is less than in reinforced concrete structures and can be easily applied in different climatic conditions.

- **Architectural Freedom**

The lightweight steel building system allows the implementation of any type of architectural project, whether classical or modern, with ease. When this system is used in conjunction with structural steel, buildings with large openings such as schools and hospitals can be constructed.

- **High Insulation**

Since materials suitable for the climate of the region where the building will be used are selected, this system provides a comfortable living environment. It provides high sound, heat insulation, and fire resistance.

- **Environmentally Friendly**

Steel, being 90% recyclable material, contributes to sustainability by preventing the consumption of natural resources. It does not require high water consumption and produces minimal waste. The ability to dismantle, move, and reassemble buildings also makes a significant contribution to building ecology. Lightweight steel structures with high insulation values provide significant energy savings. Additionally, the material consumption and loads on the ground in steel structures are lower than in reinforced concrete, so carbon emissions are also lower.