

Structures

A **structure** is an element or group of elements tied together in order to support different types of efforts. The structures, in addition to support different types of forces (loads), also have to bear own weight and must be resistant to not crumble or tip over. The structures have to be rugged, lightweight and stable. The elements present in most of the structures are the bars. Generally, the bars are solid, material is removed from areas where these do not resist the effort, thereby reducing its weight. The bars support efforts of compression when they are laid flat, supported at its ends. The resistance of the components of a structure depends on the mechanical properties of materials used and the type of effort that will be subject. The main mechanical properties of materials are: mechanical strength, hardness, elasticity, plasticity and tenacity. The major forces that can act on a material are: traction, compression, flexure, torsion and shear. The resilience of the materials to different efforts is called by tests. **The tests** are standard procedures that we can detect, verify and quantify the characteristics and properties of materials. The main mechanisms are the hardness, tensile, compression, impact resistance, bending and torsion. To carry out tests on material samples are used with standard sizes and shapes and are called probes. The application of different stresses on the specimens is performed by machines and devices to regulate and measure them. An example of these devices is the durometer. A force is stable if not dropped or dumped by the action of the forces acting on them. The stability of a structure increases: the higher the ratio between the surface of the base or its height situe The lower center of gravity. The center of gravity of a body is the point of application of the sum of all forces that constitute the body weight. There are a variety of EXTRUCTURAS, which hinders their classification. Depending on the component elements are distinguished: massive structures: walls, embankments, breakwaters, etc.. Bar structures: they can be triangulated, timbered, horizontal or vertical. Lamellar structures: are formed by sheets or plates, such as bodywork of a car or a plane. Hanging structures: its main elements are the cables and turnbuckles. For their study the structures are grouped according to: The mobility of its elements and thus can be rigid or articulated, the location of the elements that support greater efforts and so may be horizontal or vertical. Many structures are so rigid and articulated elements, vertical and horizontal. A rigid structure is one that when subjected to efforts will not deform without causing the rupture of its elements. An articulated structure is being deformed by the displacement of its elements to apply force. For the rigid structure of the ring is there to join the vertices to the extremes of one of its diagfessionals with a fifth crown. The vertical structures are those with vertical elements that support greater efforts. The elements that support greater efforts under compression. The horizontal structures are those with horizontal elements that support more efforts. The elements that support more efforts work to flexion. The curved horizontal structures used as the arch and the vault, which are able to support more efforts. Rands In construction, the beams and pillars are armed ormigon.

The **atom** is the most elementary part of a substance that retains its basic characteristics and properties. This consists of the nucleus that contains protons and neutrons, and the cortex in which electrons move. Protons are positively charged, negatively charged electrons, and neutrons have no charge. The charged particles repel and attract different signs. The electric charge of an element is the difference between the number of protons and electrons it has. The electric current is the shift from the electrons along a body. Static electrical phenomena occur when a body atoms lose or gain electrons, and consequently it is positively or negatively charged. Act**OHM**: The electrical resistance of a material is its ability to hinder the passage of electric current