

HOT ROLLED MARTENSITIC/BAINETIC STEEL SHEETS FOR ARMORING DIPLOMATIC AND CASH MONEY CARS

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Armor steel is usually used in many military applications in addition to some civil useful uses. The civil applications and uses are including security regions and rooms in the country embassies, bullet proof doors. Furthermore, the armor steel sheet are used for diplomatic and cash money transfer cars.

Ballistic resistance is in direct connection with the ultra high strength and microstructure constituents of the steel sheets. These properties depend to a great extent on the deformation temperature, amount of strain and strain rate. Consequently, it is important to widely investigate the hot deformation cycles to optimize the deformation parameters that result in the desired microstructural constituents and mechanical properties.

The project aims at development of ultra high strength steel sheets, microalloyed with boron and suitable for armoring diplomatic and cash money transfer cars.

Generally, the project contains phases, which include preparation of the steel alloy followed by hot deformation (rough and finish hot flat rolling). Hot deformation shall consider a working window at the deformation map to avoid instability region during deformation. A numerical model and roll pass design would be previously constructed.

The finish hot rolled sheets would then subjected to a delay time in the region of bainite phase creation and finally to water cooling.



The different phases of the project include mechanical testing as well as microstructural investigations to assess the capability of the steel sheets to withstand the sudden impacts of bullets.

