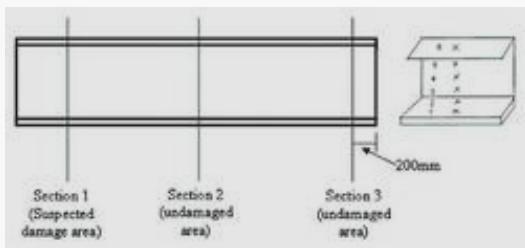


Equotip 550 Leeb

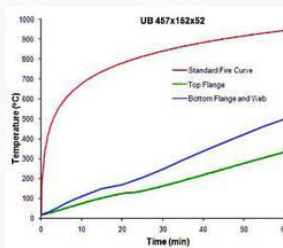
## Fire damage assessment through structural steel hardness testing

The Equotip hardness testers - Equotip 550 Leeb, Equotip Bambino 2 and Equotip Piccolo 2 - are used for checking steel structures for fire damage. For example, during construction work at Kirkintilloch High School in Scotland, there was a fire on the ground floor. Initial visual inspection was unable to establish for certain whether one of the steel beams had deformed. Hence, a hardness test was required to determine the residual strength of the beam after the fire.

An Equotip portable hardness tester was used to test the hardness values of the steel beam. The test results indicated that the steel beam had retained its original design strength at 275 N/mm<sup>2</sup> after the fire incident. It was concluded that the steel beam still retained the required 60-minute fire resistance.



Temperature time relationship



Hardness test position

	Brinell Hardness Number	Vickers Hardness Number	Ultimate Tensile Strength N/mm <sup>2</sup>
Grade S355	187	197	637
	179	189	608
	170	179	559
Grade S275	163	172	539
	156	165	530
	149	157	500
	143	150	481
	137	144	481
	131	138	461
	126	133	451
	121	127	431

Hardness number



Inspection and hardness test



Damage of composite beam

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