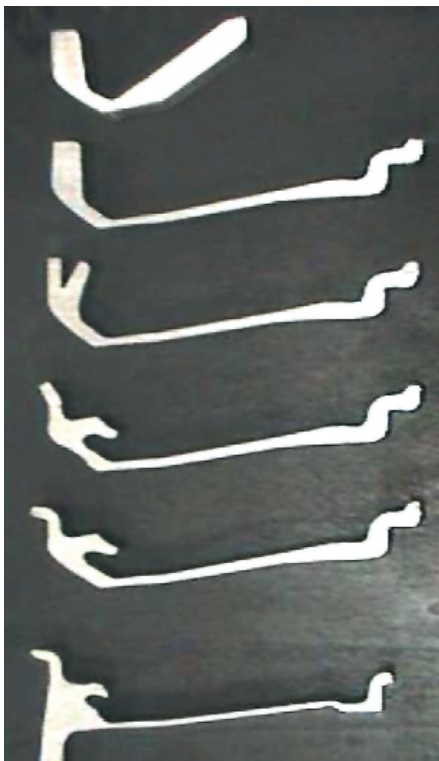
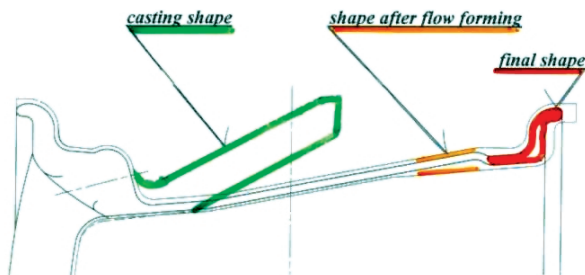


flowforming



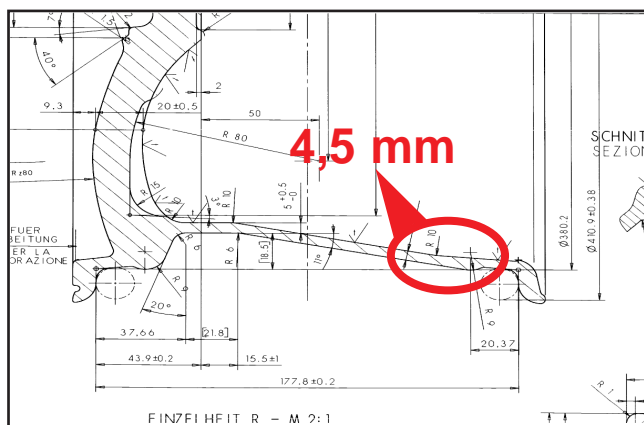
Pict. 1

An aluminium wheel normally comes from a casting process that, although extremely sophisticated, can have porosity in the alloy: this porosity, obviously, reduces the resistance of the wheel.

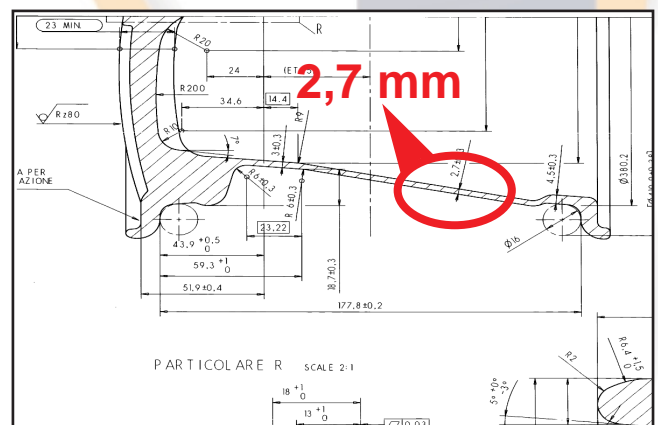
Moreover, the crystalline structure of the metal produces quite a big grain during the cooling phase, diminishing the mechanic characteristics of the wheel.

The **flow-forming** process, on the contrary, is based on a different concept: starting from a cast flange (with thickness of the external rim of 3 cm or so), through spreading the material on the rims it is possible to produce a complete wheel which puts together extraordinary mechanic characteristics with very thin thickness (2,7 mm against 4,5 mm of normal casting process). (Pict. 1 and 2).

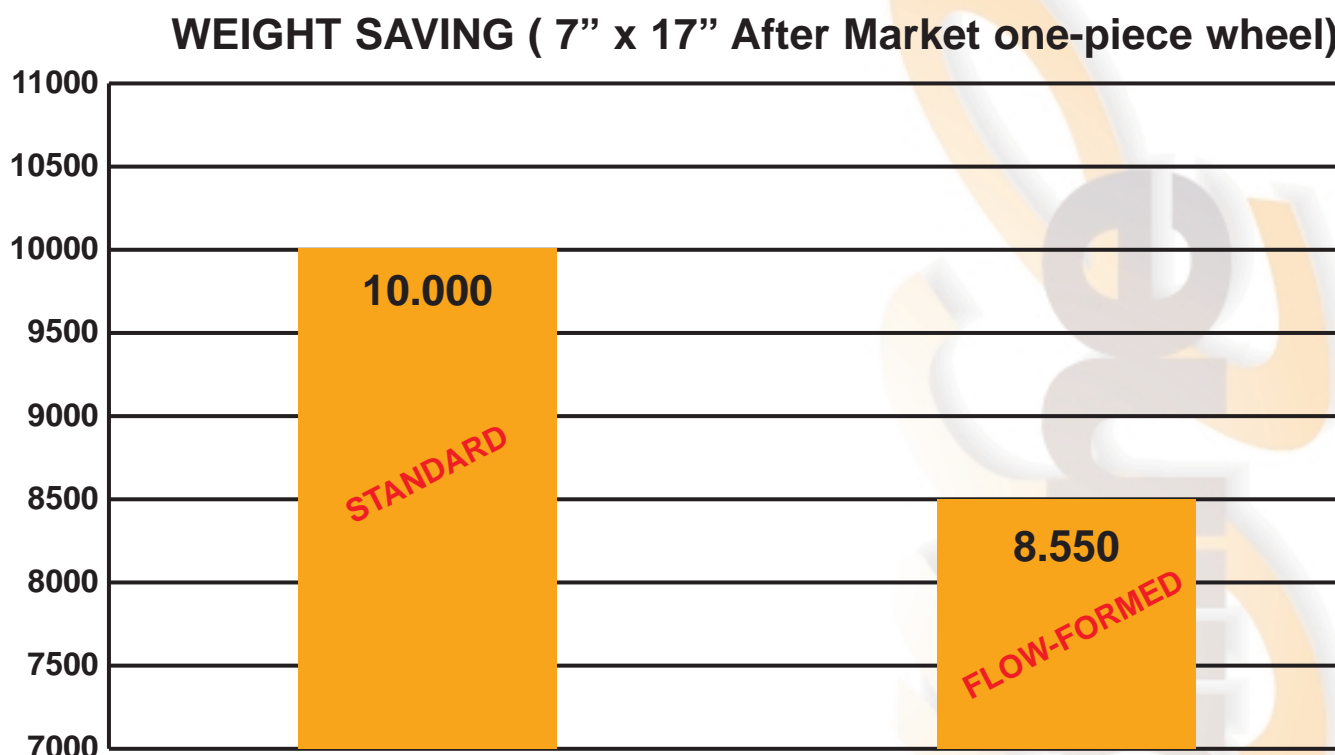
Pict. 2: Cast Rim



Pict. 2: Flow-Formed Rim



This technological process can reduce the total weight up to 15% compared to the weight of a cast wheel.



Trough this exclusive process, **Speedline** is able to manufacture wheels with weight reduction from 5% to 15%, relating to wheel size. Obviously the bigger the wheel is, more the weight reduction is. For every 100 mm of width and 1 mm reduction in rim thickness, the following weight saving can be achieved:

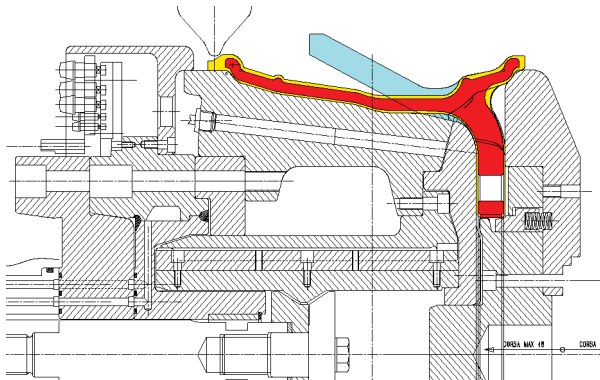
- 15" 306 g.
- 16" 328 g.
- 17" 350 g.
- 18" 370 g.

For example the two-piece wheels of **Speedline Corse** can get to the following weights:

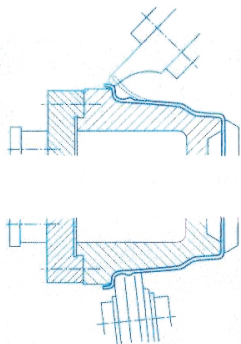
Finished wheels*	7"	8"	9"	10"	11"
17"	8,1"	8,6"	-	-	-
18"	-	9,5"	10,0"	10,5"	11,0"
19"	-	9,7"	10,2"	10,7"	11,2"

*Kg. - minimum weight, depending on style

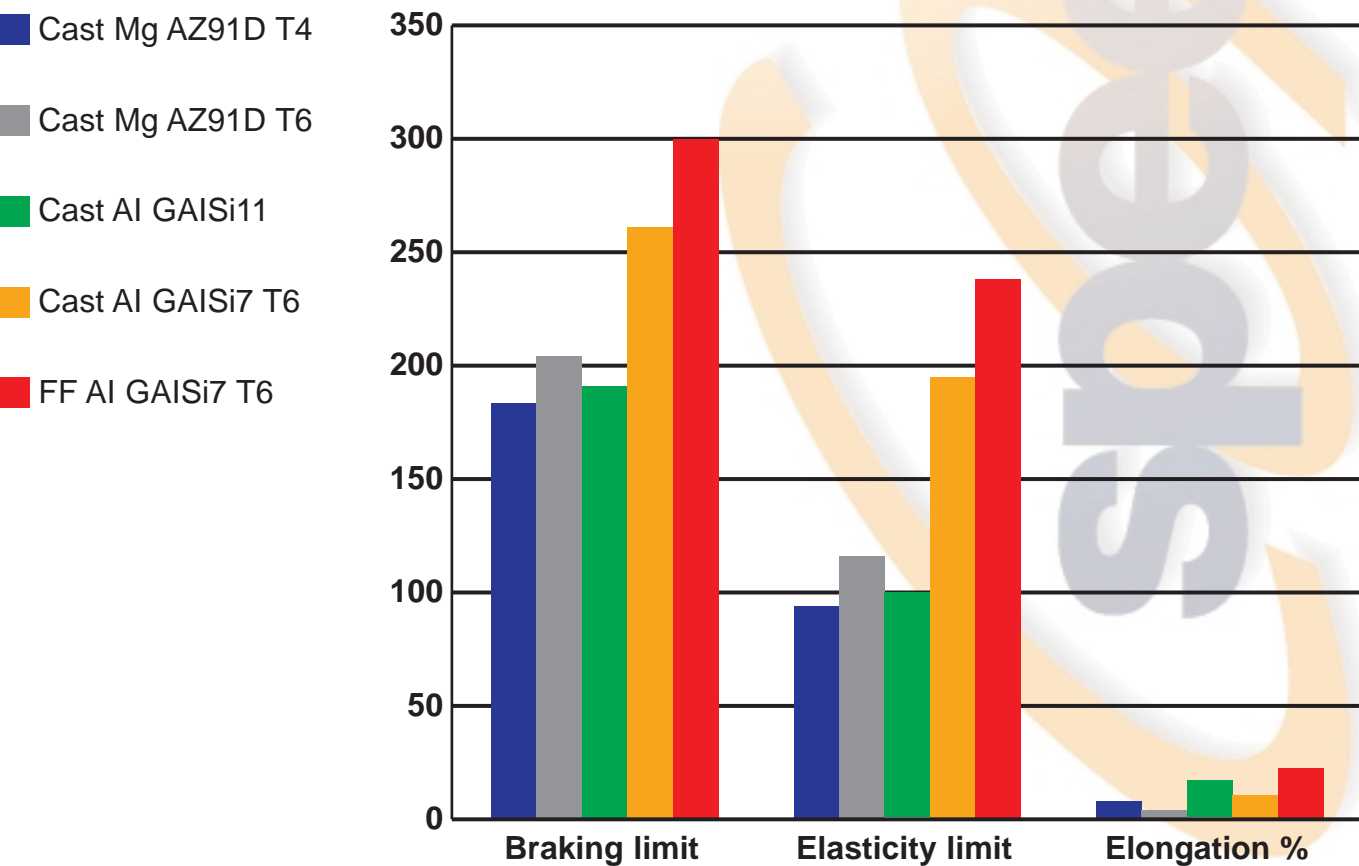
This process made with a very sophisticated machine, produces wheels of higher quality than using any other technique and with an incomparable production constancy (Pict. 3).



Pict. 3



But the advantages are not finished. The **flow-formed** wheel is lighter but also more resistant than a normal cast aluminium wheel. The mechanical properties of a **flow-formed** wheel are definitely better than cast wheel (in red colour flow-formed wheel properties):



These extraordinary features are obtained by a very particular crystalline structure of the metallic alloy, very similar to “wood fibres” (Pict. 4).



Pict. 4



The **flow-forming** process gets round the casting inconveniences (porosity of the material, weight, resistance) splitting up the inner structure, and making it look similar to forged metal but much cheaper.

Then, the concrete advantages of this innovative process are:

- a) **High technical quality** for superior mechanic characteristics
- b) **Lightness** of the wheel (-5/15% of weight), for better performances (suspension and steering wheel)
- c) **Better industrialisation** and wider productivity
- d) Better **final quality**
- e) **Spare of the material** during the various productive phases.
- f) **No limits** for design and style.

