VECTOR
industrial equipment

The Vector Industrail Equipment®

GRINDING BALL

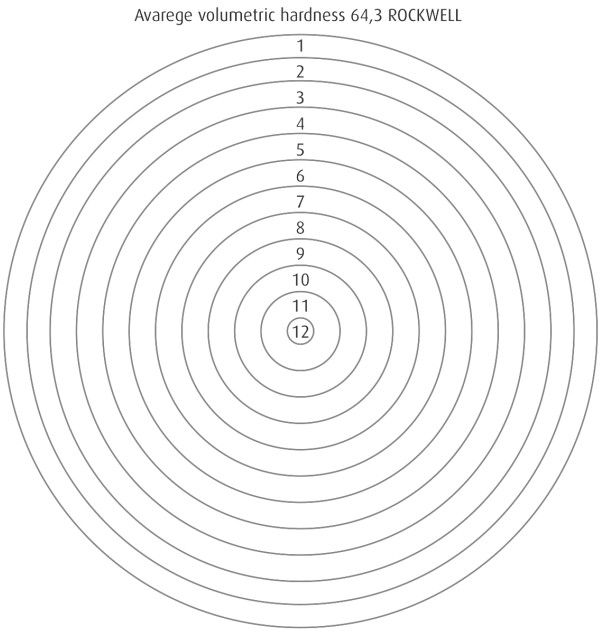


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Calculation of Grinding Media Balls Volumetric Hardness

A calculation of volumetric hardness is done far all types of forged balls and grinding media balls during the production process of . It is not possible to specify the high range hardness of the balls with a surface measurement with respect to Rockwell hardness scales. The surface hardness is not the only scale value of the ball quality, because the grinding media balls rub off and lose their volumes. The average volumetric hardness is another measurement method to measure the quality of balls. The volumetric hardness is a result of the average of ball hardness and volume. Depending on the increase of volumetric hardness, you can have more resistant and durable balls during the grinding operations.
Sample calculation (0 60 mm ball)

Shell No	Of Ball Volume %	Average Rc Reading	Shell Volume x HRc
1	22,97%	65,4	15,03
2	19,16%	65,6	12,57
3	15,68%	65,3	10,24
4	12,56%	64,8	8,14
5	9,78%	63,5	6,21
6	7,35%	62,8	4,62
7	5,27%	62,1	3,27
8	3,53%	60,4	2,13
9	2,14%	58,9	1,26
10	1,10%	58,7	0,65
11	0,41%	59,0	0,24
12	0,06%	59,9	0,03
	100,00%		64,38



Factory & Production:



MATERIAL : Our mill ball is forged steel ball and it is produced from high carbon alloy steel by performing heat treatment. in order to achieve proper mechanical specifications we produce according to steel ball diameter.

HARDNESS: The balls are produce by reaching max 67 HRC. All of steel balls which gets heat treatment are manufactured by facing the same conditions in rotating frigorifics ystem.

STEEL STRUCTURE: Our products are steel that granulated thinly and has homogen, accurate martensitic structure.

DIMENSION TOLERANCE: Production process are done by using competely automatic machines. (-+ %2)

BREAK GUARANTEE: If the balls are broken over %3 by normal operating conditions we guarantee that we change your products with our new products. Mills should not be worked with less materials at normal operating conditions because of steel balls touch each others intensely without pillow effect ensured through the materials.

