

Core Diameter	Effective Dimension, mm	volume metre	kg mass/metre of core length				WiBM	WiRM	WiC	SMC	SAGDesign	SPI/SGI	JK DWT	Comments
			2.5 t/m <sup>3</sup> ore	2.75 t/m <sup>3</sup> ore	3.0 t/m <sup>3</sup> ore	3.25 t/m <sup>3</sup> ore	3.3	12.7	51	21.25	20	32	85	
			10	15	20	20	15	10	100	minimum top size, mm	minimum mass, kg			
Suitable core lengths (m), assuming 2.75 t/m <sup>3</sup>												Comments		
AQ	27.0	0.000573	1.4	1.6	1.7	1.9	6.4	9.5		12.7	9.5	**		
1/2 AQ	13.5	0.000286	0.7	0.8	0.9	0.9	12.7	19.1				**		
1/4 AQ	6.8	0.000143	0.4	0.4	0.4	0.5	25.4							
BQ	36.5	0.001046	2.6	2.9	3.1	3.4	3.5	5.2		7.0	5.2	3.5	** - SGI & SPI tests can be done, but not CI	
1/2 BQ	18.3	0.000523	1.3	1.4	1.6	1.7	7.0	10.4				**		
1/4 BQ	9.1	0.000262	0.7	0.7	0.8	0.9	13.9							
<b>NQ</b>	<b>47.6</b>	0.001780	<b>4.4</b>	<b>4.9</b>	<b>5.3</b>	<b>5.8</b>	<b>2.0</b>	<b>3.1</b>	*	<b>4.1</b>	<b>3.1</b>	<b>2.0</b>	* - certain NQ diameter core may be suitable	
1/2 NQ	23.8	0.000890	2.2	2.4	2.7	2.9	4.1	6.1		8.2	6.1	**		
1/4 NQ	11.9	0.000445	1.1	1.2	1.3	1.4	8.2							
<b>HQ</b>	<b>63.5</b>	0.003167	<b>7.9</b>	<b>8.7</b>	<b>9.5</b>	<b>10.3</b>	<b>1.1</b>	<b>1.7</b>	<b>2.3</b>	<b>2.3</b>	<b>1.7</b>	<b>1.1</b>		
1/2 HQ	31.8	0.001583	4.0	4.4	4.8	5.1	2.3	3.4		4.6	3.4	**		
1/4 HQ	15.9	0.000792	2.0	2.2	2.4	2.6	4.6	6.9				**		
HQ3	61.1	0.002932	7.3	8.1	8.8	9.5	1.2	1.9	2.5	2.5	1.9	1.2		
1/2 HQ3	30.6	0.001466	3.7	4.0	4.4	4.8	2.5	3.7		5.0	3.7	**		
1/4 HQ3	15.3	0.000733	1.8	2.0	2.2	2.4	5.0	7.4				**		
<b>PQ</b>	<b>85.0</b>	0.005675	<b>14.2</b>	<b>15.6</b>	<b>17.0</b>	<b>18.4</b>	<b>0.6</b>	<b>1.0</b>	<b>1.3</b>	<b>1.3</b>	<b>1.0</b>	<b>0.6</b>	<b>6.4</b>	
1/2 PQ	42.5	0.002837	7.1	7.8	8.5	9.2	1.3	1.9	*	2.6	1.9	1.3	* - certain 1/2PQ diameter core may be suitable	
1/4 PQ	21.3	0.001419	3.5	3.9	4.3	4.6	2.6	3.8		5.1	3.8	**		
PQ3	83.0	0.005411	13.5	14.9	16.2	17.6	0.7	1.0	1.3	1.3	1.0	0.7		
1/2 PQ3	41.5	0.002705	6.8	7.4	8.1	8.8	1.3	2.0		2.7	2.0	1.3		
1/4 PQ3	20.8	0.001353	3.4	3.7	4.1	4.4	2.7	4.0			4.0	**		
CHD 76	43.5	0.001486	3.7	4.1	4.5	4.8	2.4	3.7		4.9	3.7	2.4		
1/2 CHD 76	21.8	0.000743	1.9	2.0	2.2	2.4	4.9	7.3		9.8	7.3	**		
1/4 CHD 76	10.9	0.000372	0.9	1.0	1.1	1.2	9.8							
CHD 101	63.5	0.003167	7.9	8.7	9.5	10.3	1.1	1.7	2.3	2.3	1.7	1.1		
1/2 CHD 101	31.8	0.001583	4.0	4.4	4.8	5.1	2.3	3.4		4.6	3.4	**		
1/4 CHD 101	15.9	0.000792	2.0	2.2	2.4	2.6	4.6	6.9				**		
CHD 134	85.0	0.005675	14.2	15.6	17.0	18.4	0.6	1.0	1.3	1.3	1.0	0.6	6.4	
1/2 CHD 134	42.5	0.002837	7.1	7.8	8.5	9.2	1.3	1.9		2.6	1.9	1.3		
1/4 CHD 134	21.3	0.001419	3.5	3.9	4.3	4.6	2.6	3.8		5.1	3.8	**		

Sources

<https://en.wikipedia.net/Exploration diamond drilling>  
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 Doll A., Phillips R. & Barratt D., Effect of Core Diameter on the Bond Impact Crushing Work Index Test, September 25, 2010  
 Doll A. & Barratt D., Grinding: Why So Many Tests?, January 20, 2011  
 Global Mining Standards & Guidelines Group, Determining the Bond Efficiency of Industrial grinding circuits, February 18, 2016  
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 SGS Comminution Handbook, SGS Minerals Chile S.A. 2018

Legend:

Wi BM Bond ball mill work index  
 Wi RM Bond rod mill work index  
 Wi C Bond low-energy crushing work index  
 JK DWT JK Drop Weight Test