

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 1718

ROCK DRILLING

DRILL RODS AND DETACHABLE BITS
FOR PERCUSSIVE DRILLING

1st EDITION
November 1970

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BRIEF HISTORY

The ISO Recommendation R 1718, *Rock drilling – Drill rods and detachable bits for percussive drilling*, was drawn up by Technical Committee ISO/TC 82, *Mining*, the Secretariat of which is held by the Deutscher Normenausschuss (DNA).

Work on this question led to the adoption of Draft ISO Recommendation No. 1718, which was circulated to all the ISO Member Bodies for enquiry in October 1968. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Australia	India	South Africa, Rep. of
Austria	Iran	Spain
Belgium	Israel	Sweden
Chile	Italy	Thailand
Czechoslovakia	Korea, Rep. of	Turkey
France	Netherlands	U.A.R.
Germany	New Zealand	United Kingdom
Greece	Peru	Yugoslavia
Hungary	Poland	

No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

ISO Recommendation

R 1718

November 1970

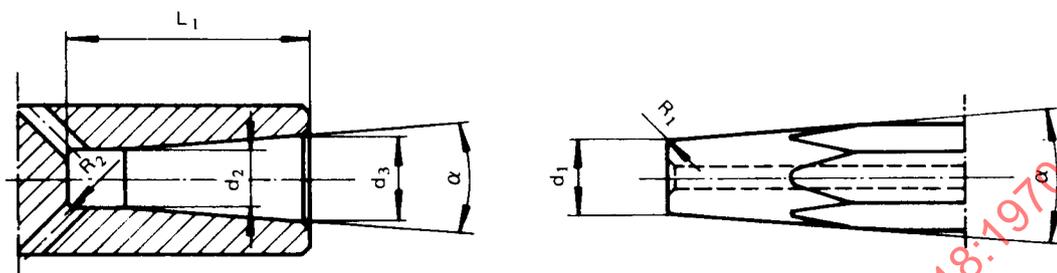
ROCK DRILLING
DRILL RODS AND DETACHABLE BITS
FOR PERCUSSIVE DRILLING

1. SCOPE

This ISO Recommendation specifies the basic dimensions for rods and detachable bits for percussive drilling and the necessary dimensions for the tapered connections.

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2. TAPERS



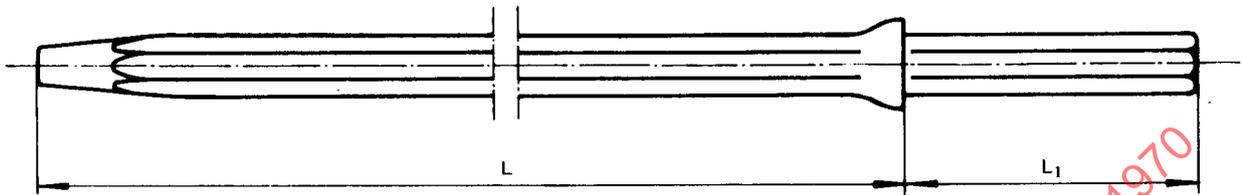
Dimensions in millimetres

Designation	Taper angle α	d_1		d_2		d_3		L_1 min.	R_1	R_2
		Basic size	Tolerance	Basic size	Tolerance	Basic size	Tolerance			
4.8° X 22	4°46'	19.1	$\begin{matrix} 0 \\ -0.2 \end{matrix}$	19.0	$\begin{matrix} +0.2 \\ 0 \end{matrix}$	22.0	$\begin{matrix} +0.2 \\ 0 \end{matrix}$	51	1.5	6.3
7° X 22	7°	16.0	$\begin{matrix} 0 \\ -0.1 \end{matrix}$	16.2	$\begin{matrix} +0.1 \\ 0 \end{matrix}$	21.8	$\begin{matrix} +0.1 \\ 0 \end{matrix}$	54	6	6.3
12° X 22	12°	14.9	$\begin{matrix} 0 \\ -0.2 \end{matrix}$	15.4	$\begin{matrix} +0.2 \\ 0 \end{matrix}$	22.0	$\begin{matrix} +0.2 \\ 0 \end{matrix}$	48	6	6.3

Dimensions in inches

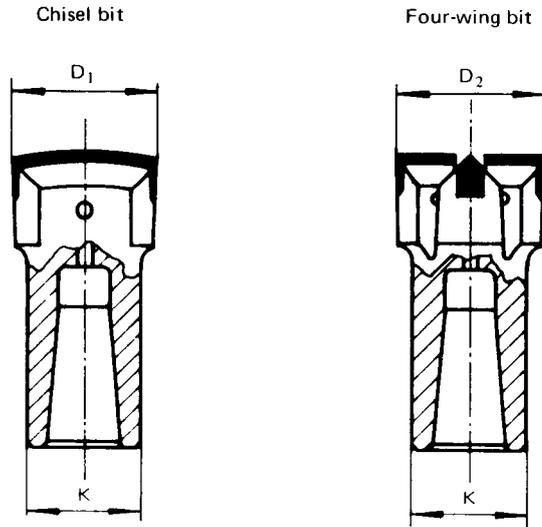
Designation	Taper angle α	d_1		d_2		d_3		L_1 min.	R_1	R_2
		Basic size	Tolerance	Basic size	Tolerance	Basic size	Tolerance			
4.8° X 22	4°46'	0.752	$\begin{matrix} 0 \\ -0.008 \end{matrix}$	0.748	$\begin{matrix} +0.008 \\ 0 \end{matrix}$	0.866	$\begin{matrix} +0.008 \\ 0 \end{matrix}$	2.000	0.059	0.250
7° X 22	7°	0.628	$\begin{matrix} 0 \\ -0.004 \end{matrix}$	0.639	$\begin{matrix} +0.004 \\ 0 \end{matrix}$	0.857	$\begin{matrix} +0.004 \\ 0 \end{matrix}$	2.125	0.234	0.250
12° X 22	12°	0.587	$\begin{matrix} 0 \\ -0.008 \end{matrix}$	0.606	$\begin{matrix} +0.008 \\ 0 \end{matrix}$	0.866	$\begin{matrix} +0.008 \\ 0 \end{matrix}$	1.890	0.234	0.250

3. TAPERED DRILL RODS



Rod sizes		Length of shank L_1		L			Taper
mm	in	mm	in	m	ft	in	
22 hex.	0.875 hex.	108	4.25	0.8	2	7	4.8° × 22
				1.6	5	3	
				2.4	7	10	
				3.2	10	6	
				4.0	13	1	
				4.8	15	9	
				5.6	18	4	
22 hex.	0.875 hex.	108	4.25	0.6	2		7° × 22 12° × 22
				1.2	4		
				1.8	6		
				2.4	8		
				3.0	10		
				3.7	12		
				4.3	14		

4. TAPERED BITS



$$K_{\max} = D_1 \text{ (or } D_2) - 3 \text{ mm (0.118 in)}$$

Taper	$D_1 + 0.3 \text{ mm} \begin{pmatrix} 0.012 \\ -0.1 \end{pmatrix} \begin{pmatrix} \text{in} \\ 0.004 \end{pmatrix}$				$D_2 + 0.03 \text{ mm} \begin{pmatrix} 0.012 \\ 0 \end{pmatrix} \begin{pmatrix} \text{in} \\ 0 \end{pmatrix}$			
	Nominal size		Basic size		Nominal size		Basic size	
	mm	in	mm	in	mm	in	mm	in
4.8° X 22	36	1.4375	36	1.417	36	1.4375	36	1.417
	40	1.5625	40	1.575	40	1.5625	40	1.575
	45	1.75	45	1.772	45	1.75	45	1.772
7° X 22	—	—	—	—	32	1.25	31.75	1.250
	—	—	—	—	35	1.375	34.92	1.375
	—	—	—	—	38	1.5	38.10	1.500
12° X 22	—	—	—	—	41	1.625	41.28	1.625
	—	—	—	—	45	1.75	44.45	1.750