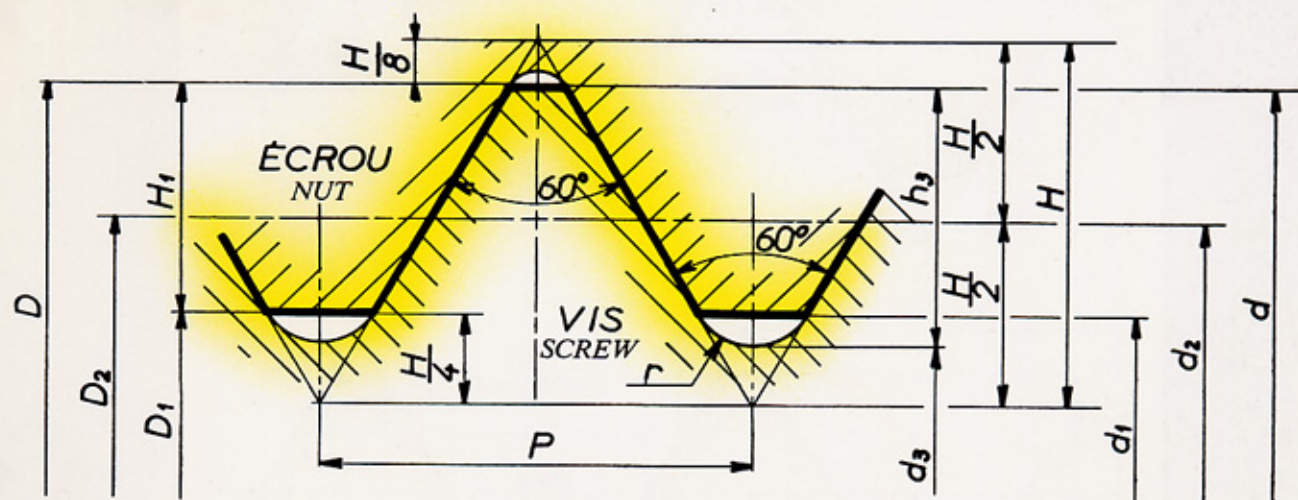


FILETAGE ISO A PROFIL TRIANGULAIRE
norme NFE 03014 et NFE 03053
Pour boulonnerie de diamètre M8 à M90

ISO TRIANGULAR PROFILE THREAD
NFE 03014 AND NFE 03053 STANDARDS
For diameter M8 to M90 bolting



$$d_2 = D_2 = d - 0,6495 P$$

$$d_3 = d - 1,2268 P$$

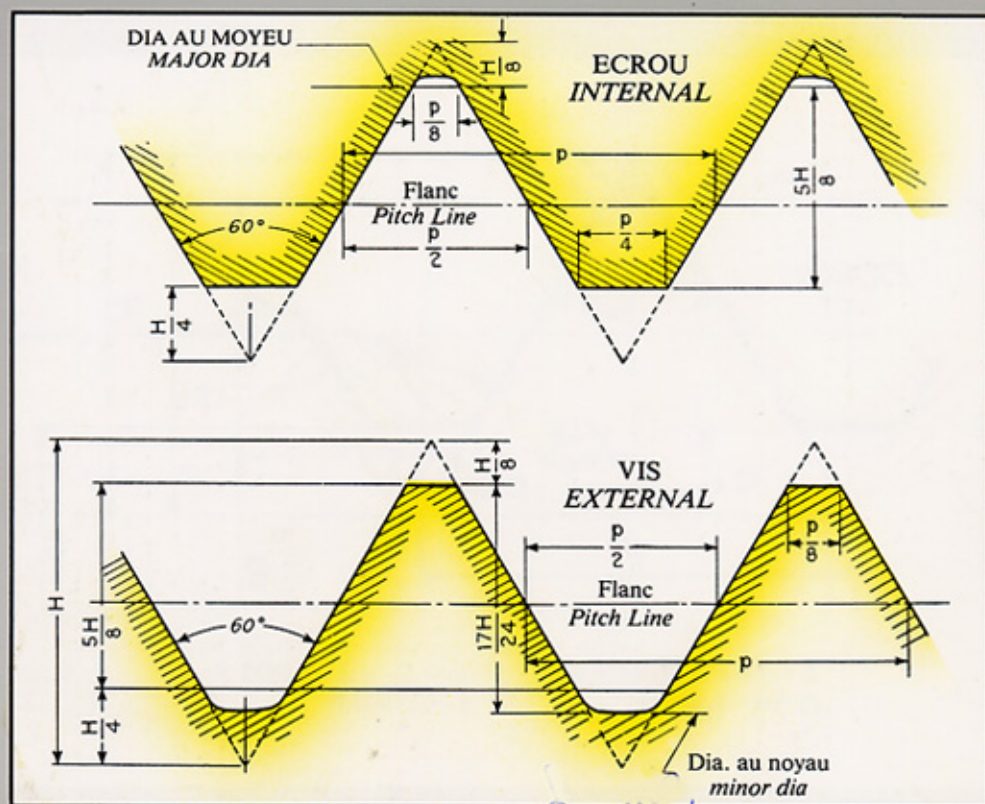
$$d_1 = D_1 = d - 1,0825 P$$

$$r = 0,1443 P$$

Diamètre nominal Nominal diameter	Pas Pitch P	VIS 6g/SCREW 6g						ÉCROU 6H/NUT 6H					
		Diamètre extérieur d External diameter d		Diamètre à flancs de filets d2 Pitch diameter d2		Diam. d1	Section résistante Stress area mm²	Diam. D	Diamètre à flancs de filets D2 Pitch diameter D2		Diamètre intérieur D1 Internal diameter D1		
		max.	min.	max.	min.				min.	max.	min.	max.	
M8	1,25	7,972	7,760	7,160	7,042	6,619	36,6	8,000	7,188	7,348	6,647	6,912	
M10	1,5	9,968	9,732	8,994	8,862	8,344	58,0	10,000	9,026	9,206	8,376	8,676	
M12	1,75	11,966	11,701	10,829	10,679	10,072	84,3	12,000	10,863	11,063	10,106	10,441	
M14	2	13,962	13,682	12,663	12,503	11,797	115	14,000	12,701	12,913	11,835	12,210	
M16	2	15,962	15,682	14,663	14,503	13,797	157	16,000	14,701	14,913	13,835	14,210	
M18	2,5	17,958	17,623	16,334	16,164	15,252	192	18,000	16,376	16,600	15,294	15,744	
M20	2,5	19,958	19,623	18,334	18,164	17,252	245	20,000	18,376	18,600	17,294	17,744	
M22	2,5	21,958	21,623	20,334	20,164	19,252	303	22,000	20,376	20,600	19,294	19,744	
M24	3	23,952	23,577	22,003	21,803	20,704	353	24,000	22,051	22,316	20,752	21,252	
M27	3	26,952	26,577	25,003	24,803	23,704	459	27,000	25,051	25,316	23,752	24,252	
M30	3,5	29,947	29,522	27,674	27,462	26,158	561	30,000	27,727	28,007	26,211	26,771	
M33	3,5	32,947	32,522	30,674	30,462	29,158	694	33,000	30,727	31,007	29,211	29,771	
M36	4	35,940	35,465	33,342	33,118	31,610	817	36,000	33,402	33,702	31,670	32,270	
M39	4	38,940	38,465	36,342	36,118	34,610	976	39,000	36,402	36,702	34,670	35,270	
M42	4,5	41,937	41,437	39,014	38,778	37,066	1120	42,000	39,077	39,392	37,129	37,799	
M45	4,5	44,937	44,437	42,014	41,778	40,066	1306	45,000	42,077	42,392	40,129	40,799	
M48	5	47,929	47,399	44,681	44,431	42,516	1473	48,000	44,752	45,087	42,587	43,297	
M52	5	51,929	51,399	48,681	48,431	46,516	1757	52,000	48,752	49,087	46,587	47,297	
M56	5,5	55,925	55,365	52,353	52,088	49,971	2030	56,000	52,428	52,783	50,046	50,796	
M60	5,5	59,925	59,365	56,353	56,088	53,971	2362	60,000	56,428	56,783	54,046	54,796	
M64	6	63,920	63,320	60,023	59,743	57,425	2676	64,000	60,103	60,478	57,505	58,305	
M68	6	67,920	67,320	64,023	63,743	61,425	3055	68,000	64,103	64,478	61,505	62,305	
M72	6	71,920	71,320	68,023	67,743	65,425	3460	72,000	68,103	68,478	65,505	66,305	
M76	6	75,920	75,320	72,023	71,743	69,425	3889	76,000	72,103	72,478	69,505	70,305	
M80	6	79,920	79,320	76,023	75,743	73,425	4344	80,000	76,103	76,478	73,505	74,305	
M85	6	84,920	84,320	81,023	80,743	78,425	4945	85,000	81,103	81,478	78,505	79,305	
M90	6	89,920	89,320	86,023	85,743	83,425	5588	90,000	86,103	86,478	83,505	84,305	

FILETAGE UNC
(Unified National Coarse)
ANSI B1.1 1960, classe 2A et 2B

UNC THREAD SERIE
(Unified National Coarse thread)
ANSI B1.1 1960, class 2A and 2B



Diamètre Nominal diameter		Nbre filets par pouce TPI	VIS EXTERNAL					ECROU INTERNAL				
			Dia. extérieur Major Dia.		Dia. à flanc Pitch Dia.		Dia noyau maxi Nom. Minor Dia.	Dia intérieur Minor Dia.		Dia à flanc Pitch Dia.		Dia. int. mini Major Dia. min.
			Maxi	Mini	Maxi	Mini		Mini	Maxi	Mini	Maxi	
1/4	6,350	20	0.2489	0.2408	0.2164	0.2127	0.1876	0.196	0.207	0.2175	0.2223	0.2500
5/16	7,937	18	0.3113	0.3026	0.2752	0.2712	0.2431	0.252	0.265	0.2764	0.2817	0.3125
3/8	9,525	16	0.3737	0.3643	0.3331	0.3287	0.2970	0.307	0.321	0.3344	0.3401	0.3750
7/16	11,112	14	0.4361	0.4258	0.3897	0.3850	0.3485	0.360	0.376	0.3911	0.3972	0.4375
1/2	12,700	13	0.4985	0.4876	0.4485	0.4435	0.4041	0.417	0.434	0.4500	0.4565	0.5000
9/16	14,287	12	0.5609	0.5495	0.5068	0.5016	0.4587	0.472	0.490	0.5084	0.5152	0.5625
5/8	15,875	11	0.6234	0.6113	0.5644	0.5589	0.5119	0.527	0.546	0.5660	0.5732	0.6250
3/4	19,050	10	0.7482	0.7353	0.6832	0.6773	0.6255	0.642	0.663	0.6850	0.6927	0.7500
7/8	22,225	9	0.8731	0.8592	0.8009	0.7946	0.7368	0.755	0.778	0.8028	0.8110	0.8750
1	25,400	8	0.9980	0.9830	0.9168	0.9100	0.8446	0.865	0.890	0.9188	0.9276	1.0000
1 1/8	28,575	7	1.1228	1.1064	1.0300	1.0228	0.9475	0.970	0.998	1.0322	1.0416	1.1250
1 1/4	31,750	7	1.2478	1.2314	1.1550	1.1476	1.0725	1.095	1.123	1.1572	1.1668	1.2500
1 3/8	34,925	6	1.3726	1.3544	1.2643	1.2563	1.1681	1.195	1.225	1.2667	1.2771	1.3750
1 1/2	38,100	6	1.4976	1.4794	1.3893	1.3812	1.2931	1.320	1.350	1.3917	1.4022	1.5000
1 3/4	44,450	5	1.7473	1.7268	1.6175	1.6085	1.5019	1.534	1.568	1.6201	1.6317	1.7500
2	50,800	4,5	1.9971	1.9751	1.8528	1.8433	1.7245	1.759	1.795	1.8557	1.8681	2.0000
2 1/4	57,150	4,5	2.2471	2.2251	2.1028	2.0931	1.9745	2.009	2.045	2.1057	2.1183	2.2500
2 1/2	63,500	4	2.4969	2.4731	2.3345	2.3241	2.1902	2.229	2.267	2.3376	2.3511	2.5000
2 3/4	69,850	4	2.7468	2.7230	2.5844	2.5739	2.4401	2.479	2.517	2.5876	2.6013	2.7500
3	76,200	4	2.9968	2.9730	2.8344	2.8237	2.6901	2.729	2.767	2.8376	2.8515	3.0000
3 1/4	82,550	4	3.2467	3.2229	3.0843	3.0734	2.9400	2.979	3.017	3.0876	3.1017	3.2500
3 1/2	88,900	4	3.4967	3.4729	3.3343	3.3233	3.1900	3.229	3.267	3.3376	3.3519	3.5000
3 3/4	95,250	4	3.7466	3.7228	3.5842	3.5730	3.4399	3.479	3.517	3.5876	3.6021	3.7500
4	101,600	4	3.9966	3.9728	3.8342	3.8229	3.6899	3.729	3.767	3.8376	3.8523	4.0000

Les classes 2A pour les vis et 2B pour les écrous correspondent approximativement en précision pour le métrique à la classe moyenne 6g pour les vis et 6H pour les écrous.
La table ci-dessus est établie en pouces et décimales de pouces.

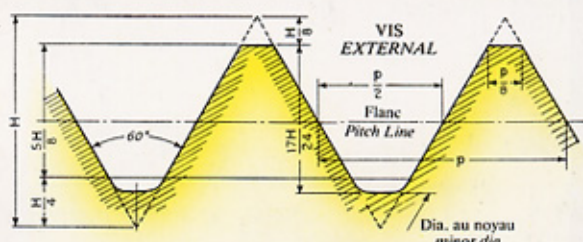
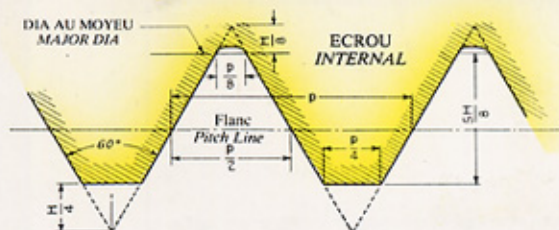
As to precision, classes 2A and 2B of Unified thread correspond approximately to 6g and 6H medium classes of ISO metric thread.
Above table is computed in inches and decimal inches.

FILETAGE UNF (Unified National Fine)

ANSI B1.1. 1960, classe 2A et 2B

UNF THREAD SERIE (Unified National Fine thread)

ANSI B1.1. 1960, classe 2A et 2B



Diamètre Nominal diameter		Nbre filets par pouce TPI	VIS EXTERNAL					ECROU INTERNAL				
			Dia. extérieur Major Dia.		Dia. à flanc Pitch Dia.		Dia noyau maxi Nom. Minor Dia.	Dia intérieur Minor Dia.		Dia à flanc Pitch Dia.		Dia. int. mini Major Dia. min.
			Maxi	Mini	Maxi	Mini		Mini	Maxi	Mini	Maxi	
1/4	6,350	28	0.2490	0.2425	0.2258	0.2225	0.2052	0.211	0.220	0.2268	0.2311	0.2500
5/16	7,937	24	0.3114	0.3042	0.2843	0.2806	0.2603	0.267	0.277	0.2854	0.2902	0.3125
3/8	9,525	24	0.3739	0.3667	0.3468	0.3430	0.3228	0.330	0.340	0.3479	0.3528	0.3750
7/16	11,112	20	0.4362	0.4281	0.4037	0.3995	0.3749	0.383	0.395	0.4050	0.4104	0.4375
1/2	12,700	20	0.4987	0.4906	0.4662	0.4619	0.4374	0.446	0.457	0.4675	0.4731	0.5000
9/16	14,287	18	0.5611	0.5524	0.5250	0.5205	0.4929	0.502	0.515	0.5264	0.5323	0.5625
5/8	15,875	18	0.6236	0.6149	0.5875	0.5828	0.5554	0.565	0.578	0.5889	0.5949	0.6250
3/4	19,050	16	0.7485	0.7391	0.7079	0.7029	0.6718	0.682	0.696	0.7094	0.7159	0.7500
7/8	22,225	14	0.8734	0.8631	0.8270	0.8216	0.7858	0.798	0.814	0.8286	0.8356	0.8750
1	25,400	12	0.9982	0.9868	0.9441	0.9382	0.8960	0.910	0.928	0.9459	0.9535	1.0000
1 1/8	28,575	12	1.1232	1.1118	1.0691	1.0631	1.0210	1.035	1.053	1.0709	1.0787	1.1250
1 1/4	31,750	12	1.2482	1.2368	1.1941	1.1879	1.1460	1.160	1.178	1.1959	1.2039	1.2500
1 3/8	34,925	12	1.3731	1.3617	1.3190	1.3127	1.2709	1.285	1.303	1.3209	1.3291	1.3750
1 1/2	38,100	12	1.4981	1.4867	1.4440	1.4376	1.3959	1.410	1.428	1.4459	1.4542	1.5000

FILETAGE 8 UNS (Unified National Spécial série 8 filets)

ANSI B1.1. 1960, classe 2A et 2B

8 UNS THREAD SERIE (Unified National Special 8 TPI)

ANSI B1.1. 1960, class 2A and 2B

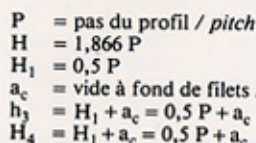
Dénomination Nominal size		Nbre filets par pouce Threads per inch	VIS EXTERNAL					ECROU INTERNAL				
			Dia. extérieur Major Dia.		Dia. à flanc Pitch Dia.		Dia noyau maxi Nom. Minor Dia.	Dia intérieur Minor Dia.		Dia à flanc Pitch Dia.		Dia. int. mini Major Dia. min.
			Maxi	Mini	Maxi	Mini		Mini	Maxi	Mini	Maxi	
1 1/8	28,575	8	1.1229	1.1079	1.0417	1.0348	0.9695	0.990	1.015	1.0438	1.0528	1.1250
1 1/4	31,750	8	1.2479	1.2329	1.1667	1.1597	1.0945	1.115	1.140	1.1688	1.1780	1.2500
1 3/8	34,925	8	1.3728	1.3578	1.2916	1.2844	1.2194	1.240	1.265	1.2938	1.3031	1.3750
1 1/2	38,100	8	1.4978	1.4828	1.4166	1.4093	1.3444	1.365	1.390	1.4188	1.4283	1.5000
1 5/8	41,275	8	1.6228	1.6078	1.5416	1.5342	1.4694	1.490	1.515	1.5438	1.5535	1.6250
1 3/4	44,450	8	1.7477	1.7327	1.6665	1.6590	1.5943	1.615	1.640	1.6688	1.6786	1.7500
1 7/8	47,625	8	1.8727	1.8577	1.7915	1.7838	1.7193	1.740	1.765	1.7938	1.8038	1.8750
2	50,800	8	1.9977	1.9827	1.9165	1.9087	1.8443	1.865	1.890	1.9188	1.9289	2.0000
2 1/4	57,150	8	2.2476	2.2326	2.1664	2.1584	2.0942	2.115	2.140	2.1688	2.1792	2.2500
2 1/2	63,500	8	2.4976	2.4826	2.4164	2.4082	2.3442	2.365	2.390	2.4188	2.4294	2.5000
2 3/4	69,850	8	2.7475	2.7325	2.6663	2.6580	2.5941	2.615	2.640	2.6688	2.6796	2.7500
3	76,200	8	2.9974	2.9824	2.9162	2.9077	2.8440	2.865	2.890	2.9188	2.9299	3.0000
3 1/4	82,550	8	3.2474	3.2324	3.1662	3.1575	3.0940	3.115	3.140	3.1688	3.1801	3.2500
3 1/2	88,900	8	3.4974	3.4824	3.4162	3.4074	3.3440	3.365	3.390	3.4188	3.4303	3.5000
3 3/4	95,250	8	3.7473	3.7323	3.6661	3.6571	3.5939	3.615	3.640	3.6688	3.6805	3.7500
4	101,600	8	3.9973	3.9823	3.9161	3.9070	3.8439	3.865	3.890	3.9188	3.9307	4.0000

Les classes 2A pour les vis et 2B pour les écrous correspondent approximativement en précision pour le métrique à la classe moyenne 6g pour les vis et 6H pour les écrous.
La table ci-dessus est établie en pouces et décimales de pouces.

As to precision, classes 2A and 2B of Unified thread correspond approximately to 6g and 6H medium classes of ISO metric thread.
Above table is computed in inches and inches decimal.

NFE 03.615 MARS 1972

NFE 03.615 MARCH 1972



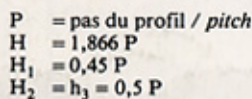
d = diamètre nominal du filetage /
nominal diameter of thread
diamètre extérieur de la vis /
external diameter of screw

$R_1 \text{ max} = 0,5 a_c$ $R_2 \text{ max} = a_c$

$$\begin{aligned} d_2 &= D_2 = d - 2 H_1/2 = d - 0,5 P \\ d_3 &= d - 2h_3 = d - P - 2 a_c \\ D_1 &= d - 2H_1 = d - P \\ D_4 &= d + 2 a_c \end{aligned}$$

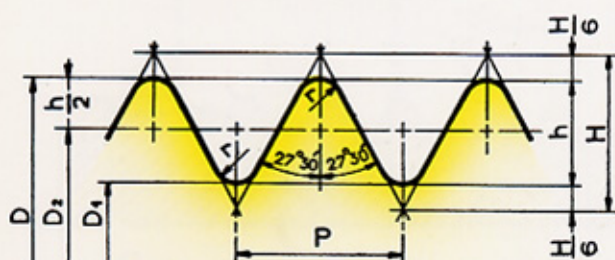
NF F00.032 OCT. 1972

NF F00.032 OCT. 1972


$$\begin{aligned} a &= 0,05 \text{ P} \\ r_1 &= 0,23851 \text{ P} \\ R_2 &= 0,25597 \text{ P} \\ R_3 &= 0,22105 \text{ P} \end{aligned}$$

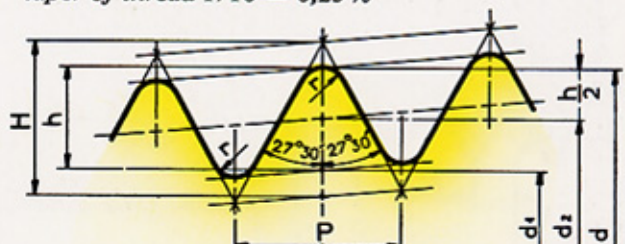
d = diamètre nominal / *nominal diameter*
 $d_2 = D_2 = d - H_1$
 $d_3 = d - 2 h_3$
 D = diamètre intérieur du taraudage / *internal nut diameter* = $d + 2a$
 $D_1 = D - 2 H_2 = d - 2 H_1$

**CYLINDRIQUE
STRAIGHT (parallel)**



$$\begin{aligned} H &= 0,960491 \times P \\ h &= 0,640327 \times P \\ r &= 0,137329 \times P \end{aligned}$$

**CONIQUE
conicité (sur diam.) 1/16 = 6,25%
CONICAL
taper of thread 1/16 = 6,25%**



$$\begin{aligned} H &= 0,960237 \times P \\ h &= 0,640327 \times P \\ r &= 0,137278 \times P \end{aligned}$$

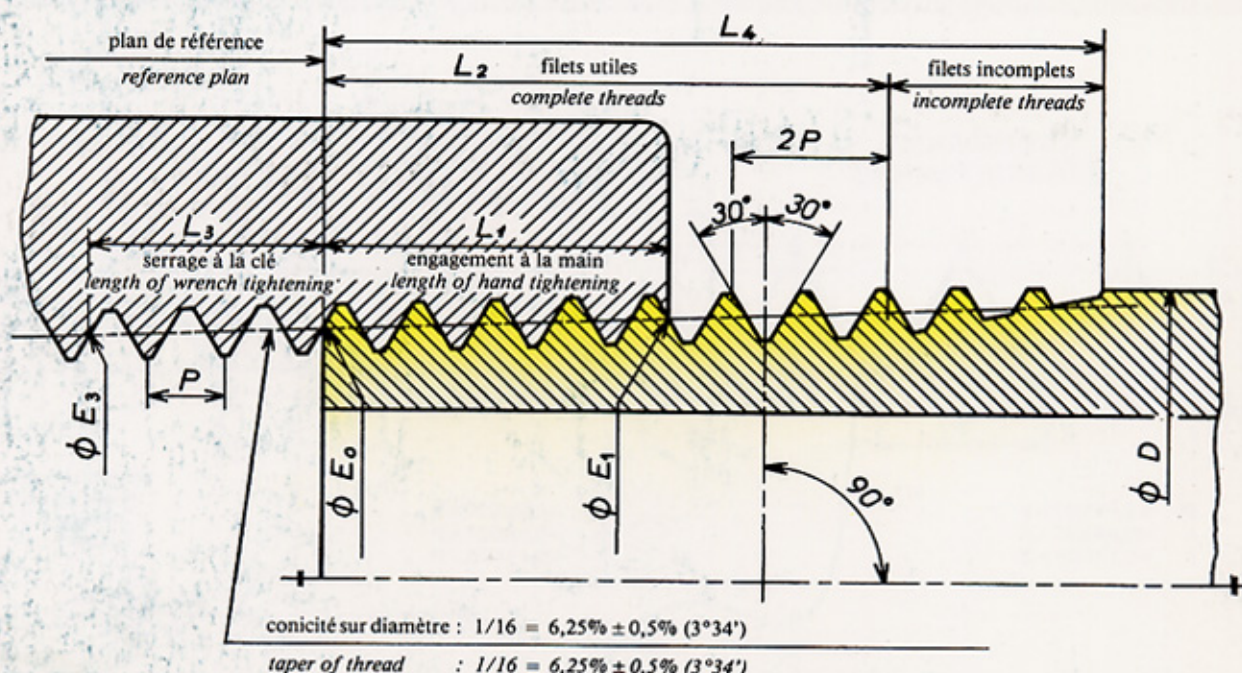
diamètres dans le
plan de jauge
diameters in
gauge plan

axe de filetage
thread axis

Dimensions / Dimensions

Dénomination Nominal pipe size	Pas Pitch P	Nombre de pas dans 25,4 Number of Threads per inch	Profondeur Height h	Diamètres / Diameters			Ancienne dénomination Former appellation
				extérieur/ outside D=d	sur flancs/ pitch D ₂ =d ₂	du noyau/ minor dia D ₁ =d ₁	
1/16*	0,907	28	0,581	7,723	7,142	6,561	—
1/8	0,907	28	0,581	9,728	9,147	8,566	5—10
1/4	1,337	19	0,856	13,157	12,301	11,445	8—13
3/8	1,337	19	0,856	16,662	15,806	14,950	12—17
1/2	1,814	14	1,162	20,955	19,793	18,631	15—21
3/4	1,814	14	1,162	26,441	25,279	24,117	20—27
1	2,309	11	1,479	33,249	31,770	30,291	26—34
1 1/4	2,309	11	1,479	41,910	40,431	38,952	33—42
1 1/2	2,309	11	1,479	47,803	46,324	44,845	40—49
2	2,309	11	1,479	59,614	58,135	56,656	50—60
2 1/2	2,309	11	1,479	75,184	73,705	72,226	66—76
3	2,309	11	1,479	87,884	86,405	84,926	80—90
3 1/2	2,309	11	1,479	100,330	98,851	97,372	90—102
4	2,309	11	1,479	113,030	111,551	110,072	102—114
5	2,309	11	1,479	138,430	136,951	135,472	127—140
6	2,309	11	1,479	163,830	162,351	160,872	152—165

* le filetage G 1/16 n'est pas prévu par l'ISO
Pipe 1/16 thread is not foreseen by ISO



Les diamètres sont mesurés sur les flancs des filets.
Les longueurs sont mesurées à partir de la petite extrémité du filetage extérieur qui constitue le plan de référence.
A la main, on peut théoriquement visser une longueur L_1 .
A la clé, on peut théoriquement visser une longueur L_3 .
 L_2 est la longueur minimale de filets utiles.
 $2P$ sont deux filets dont les sommets peuvent n'être qu'imparfaitement formés.

Diameters are measured on pitch diameters.
Lengths are measured from small outside diameter end, which is reference plan.
Length L_1 is theoretically reached by hand tightening.
Length L_3 is theoretically reached by wrench tightening.
 L_2 is a minimum length of complete threads.
 $2P$ are two threads for which unfull form is allowed.

Dénomination Nominal size pipe	Diamètre nominal correspondant n° Metric nominal diameter	Diamètre extérieur du tube D Outside diameter of pipe D	L_1	L_2	L_3		L_4	E_0	E_1	E_3
					Nomb. Number of threads	mini				
1/8	3	10,2	4,10	6,70	3	2,82	9,97	9,233	9,489	9,057
1/4	6	13,5	5,79	10,21	3	4,23	15,10	12,126	12,487	11,861
3/8	10	17,2	6,10	10,36	3	4,23	15,26	15,545	15,926	15,281
1/2	15	21,3	8,13	13,56	3	5,44	19,85	19,264	19,772	18,924
3/4	20	26,9	8,61	13,86	3	5,44	20,15	24,579	25,117	24,239
1	25	33,7	10,16	17,34	3	6,63	25,01	30,826	31,461	30,412
1 1/4	32	42,4	10,67	17,95	3	6,63	25,62	39,551	40,218	39,137
1 1/2	40	48,3	10,67	18,38	3	6,63	26,04	45,621	46,287	45,206
2	50	60,3	11,07	19,22	3	6,63	26,88	57,633	58,325	57,219
2 1/2	65	73	17,32	28,89	2	6,35	39,91	69,076	70,159	68,679
3	80	88,9	19,46	30,48	2	6,35	41,50	84,852	86,068	84,455
4	100	114,3	21,44	33,02	2	6,35	44,04	110,093	111,433	109,696