

Table SINV-40

International patent families granted in civil engineering, by region, country, or economy: 1998–2020

(Number)

Region, country, or economy	Economy by income status	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
World	na	17,034	18,560	14,975	14,572	14,701	16,222	17,032	17,558	20,653	21,873	19,194	19,200	22,311	24,919	27,401	27,742	28,875	32,518	37,747	38,898	38,150	37,461	41,322
North America	na	2,507	2,568	2,591	2,590	2,467	2,379	2,263	1,935	2,019	1,699	1,653	1,860	2,529	2,254	2,493	2,816	3,062	3,277	3,428	3,482	3,424	3,793	3,539
Canada	High	231	250	256	296	238	228	227	224	223	185	196	213	267	279	279	292	334	316	369	377	370	427	384
Mexico	Upper middle	4	3	1	2	4	2	2	1	3	2	2	4	5	5	5	8	8	13	33	35	37	41	16
United States	High	2,273	2,314	2,334	2,292	2,225	2,149	2,034	1,711	1,793	1,512	1,455	1,644	2,257	1,969	2,209	2,517	2,719	2,948	3,026	3,070	3,016	3,326	3,139
Central America and Caribbean	na	1	3	2	7	1	2	3	5	1	1	3	0	1	1	3	2	3	2	3	0	1	0	0
Puerto Rico	High	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
South America	na	5	17	24	23	21	21	25	19	20	15	25	47	32	39	42	55	54	57	73	71	93	135	149
Argentina	Upper middle	2	4	2	3	4	1	1	1	1	1	2	0	5	2	3	1	3	4	5	3	2	3	5
Brazil	Upper middle	3	8	18	14	13	11	19	11	16	10	13	42	23	29	31	46	43	43	60	58	83	115	138
Europe	na	5,605	5,251	4,785	4,921	5,141	5,496	6,194	5,410	5,236	4,945	5,152	5,353	5,254	5,011	5,419	5,258	5,413	5,647	5,649	6,331	5,979	5,645	5,393
EU-27 + UK ^a	na	3,896	3,906	3,601	3,562	3,610	3,691	4,087	3,678	3,450	3,261	3,364	3,299	3,294	3,484	3,585	3,350	3,471	3,723	3,994	4,412	4,039	3,937	3,757
United Kingdom	High	409	365	366	410	490	528	484	511	459	280	284	323	314	324	360	248	292	318	314	398	301	312	372
EU-27 ^b	na	3,487	3,541	3,235	3,152	3,120	3,163	3,603	3,167	2,991	2,981	3,080	2,975	2,980	3,160	3,224	3,102	3,179	3,405	3,680	4,015	3,738	3,625	3,385
Austria	High	160	156	140	135	149	167	112	131	197	110	138	153	166	162	194	151	126	169	167	172	184	183	183
Belgium	High	39	29	27	37	29	34	43	42	44	44	31	44	36	31	29	23	36	110	216	163	123	129	150
Denmark	High	20	15	21	37	36	37	30	34	36	29	41	40	47	38	50	75	69	117	86	77	81	102	94
Finland	High	69	53	48	49	61	54	50	59	56	39	50	80	75	71	78	69	76	103	80	89	76	79	86
France	High	792	738	643	606	474	615	694	590	655	649	689	587	548	589	717	752	712	919	731	583	576	676	666
Germany	High	1,014	1,145	1,012	1,130	1,280	1,270	1,149	1,032	1,141	1,056	980	952	914	885	908	895	1,048	1,098	1,227	1,203	1,186	1,137	1,185
Hungary	High	16	20	15	12	8	12	14	16	19	9	10	6	24	21	11	11	11	17	13	10	7	7	17
Ireland	High	32	12	8	7	23	21	19	16	20	10	9	9	13	16	26	31	28	26	23	19	14	17	9
Italy	High	378	487	530	265	274	215	612	310	34	38	44	47	165	298	200	55	50	46	92	662	585	466	229
Netherlands	High	294	307	277	277	299	219	278	276	255	293	307	237	229	306	259	292	224	219	278	291	236	215	222
Spain	High	158	144	129	173	100	151	162	217	195	257	282	333	271	261	271	275	281	169	181	188	176	107	81
Sweden	High	227	129	123	114	137	130	215	159	99	145	140	104	147	130	133	92	82	97	128	133	100	104	140
Other Europe	na	1,708	1,345	1,184	1,359	1,531	1,806	2,107	1,731	1,786	1,684	1,788	2,055	1,960	1,527	1,834	1,908	1,942	1,924	1,656	1,919	1,940	1,708	1,636
Other Europe-2020 ^b	na	2,118	1,710	1,550	1,769	2,021	2,334	2,592	2,243	2,246	1,964	2,072	2,378	2,274	1,851	2,195	2,156	2,234	2,242	1,969	2,317	2,241	2,020	2,008

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Belarus	Upper middle	5	10	4	3	4	8	8	12	13	18	30	33	23	22	18	19	10	7	21	33	23	22	17
Moldova	Lower middle	1	6	3	4	1	10	4	1	7	3	3	6	12	12	7	4	6	4	10	8	2	6	6
Norway	High	74	84	59	90	94	112	63	103	105	74	98	59	90	82	108	194	152	136	167	210	190	153	157
Russia	Upper middle	1,472	1,117	986	1,050	1,253	1,385	1,422	1,431	1,449	1,333	1,397	1,667	1,561	1,205	1,457	1,442	1,530	1,530	1,219	1,432	1,512	1,336	1,256
Switzerland	High	101	89	113	169	113	121	109	93	127	106	104	120	127	85	98	112	115	139	155	152	115	132	158
Ukraine	Lower middle	46	35	15	40	59	167	500	87	79	139	143	153	123	108	123	122	102	87	62	60	67	31	8
Asia	na	8,464	10,017	6,886	6,462	6,580	7,772	7,908	9,672	12,898	14,799	11,876	11,447	14,004	17,202	18,893	19,122	19,858	23,014	28,101	28,557	28,247	27,416	31,698
China	Upper middle	61	102	188	233	232	452	527	626	766	911	1,288	2,209	3,001	4,214	5,179	4,737	6,592	12,595	16,717	16,739	16,210	15,587	19,235
India	Lower middle	1	0	0	2	0	0	2	2	1	3	1	3	2	10	10	11	21	18	28	44	29	36	36
Japan	High	7,849	8,564	5,983	5,450	5,223	5,670	5,571	6,346	6,904	7,872	7,250	6,319	6,993	7,577	7,496	7,764	7,280	5,250	5,959	5,870	6,029	5,653	5,652
Malaysia	Upper middle	4	2	5	3	5	4	5	6	15	30	9	14	26	30	13	34	20	24	25	26	31	5	6
Singapore	High	6	6	6	6	7	7	8	9	7	7	8	9	5	10	9	8	13	17	22	25	31	34	24
South Korea	High	339	1,143	520	523	858	1,408	1,540	2,442	4,915	5,678	3,091	2,653	3,701	5,092	5,912	6,256	5,627	4,726	4,897	5,406	5,520	5,683	6,461
Taiwan	High	187	188	178	241	244	221	250	237	278	291	220	232	265	263	268	299	300	369	434	421	380	401	263
Middle East	na	30	25	38	45	30	36	28	30	30	25	37	26	34	31	58	59	60	70	86	101	81	133	167
Israel	High	17	14	14	22	17	18	14	11	16	9	10	16	13	12	17	13	18	21	20	17	22	27	25
Africa	na	193	210	163	186	151	189	175	142	119	102	153	142	128	72	138	94	99	34	17	17	21	28	19
South Africa	Upper middle	186	194	147	170	132	164	152	134	112	94	149	136	116	50	124	73	78	26	10	10	12	16	12
Australia and Oceania	na	213	223	240	329	307	322	421	333	318	287	294	301	326	305	351	332	318	408	378	335	302	306	349
Australia	High	201	210	227	315	292	306	398	304	296	267	269	271	292	276	314	289	270	352	332	288	266	272	325
New Zealand	High	12	12	13	13	16	16	22	29	22	20	25	29	34	29	37	43	48	56	46	47	36	35	24
Unclassified	na	15	248	246	9	3	5	14	13	12	1	2	24	4	3	5	4	7	10	12	4	3	4	7

na = not applicable, metric not calculated at this level.

EU = European Union; UK = United Kingdom.

^a The United Kingdom was a part of the EU for data purposes from 1973 to 2019.

^b Beginning in 2020, the United Kingdom was no longer a member of the EU.

Note(s):

International Patent Documentation (INPADOC) patent families across all patent offices covered in the Worldwide Patent Statistical Database (PATSTAT) are counted according to the year of the first granted patent in the patent family. Patent families are allocated according to patent inventorship information found on the priority patent of the INPADOC patent families. To account for missing ownership information in PATSTAT for some offices, a method designed by de Rassenfosse et al. (2013) is used to fill missing information on priority patents using information in successive filings within the families. Priority patents not indexed in PATSTAT are replaced by the next utility patent(s) in the families according to filing dates. Patent families are fractionally allocated among regions, countries, or economies based on the proportion of residences of all named inventors. Patents are classified under the World Intellectual Property Organization (WIPO) classification of patents, which classifies International Patent Classification (IPC) codes under 35 technical fields. IPC reformed codes take into account changes that were made to the WIPO classification in 2006 under the eighth version of the classification and were used to prepare these data. China includes Hong Kong. Data were extracted in June 2021. Because of data coverage issues for some patent offices in PATSTAT, statistics for some countries may be underestimated partially for some years or across the whole trend. Countries with identified issues include India (missing data) and South Africa (no data for 2018). For Italy, because of data gaps regarding information on granted patents, patent applications are used instead, which slightly overestimates Italy's output and creates a small shift in year for which its output is accounted. As patent authorities become more involved with the European Patent Organisation, these gaps should disappear in the future, strengthening the robustness of statistics for these countries.

Source(s):

National Center for Science and Engineering Statistics; Science-Metrix; PATSTAT, accessed October 2021.

Science and Engineering Indicators