

Surveying licenses to perform surveying (geodetic) works in Poland

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1. Introduction

The authorization to perform geodetic works in Poland has had a long history. In fact, its beginning can be traced back to the years after regaining independence. During this period, until 1952, it was the institution of a sworn surveyor that functioned in Poland. The period after that can be described as an attempt to liquidate or at least diversify the powers for the benefit of public units of geodetic contracting. Those powers returned with a change of rule in 1984.

Currently, the geodetic qualifications in Poland are issued in seven scopes. Apart from those, the qualifications to classify land, the qualifications for real estate appraisal or the qualifications for mining surveyor can also be considered as related to the geodetic works. Surveying is increasingly becoming related to the license to pilot UAVs (Unmanned Aerial Vehicles).

Many of the other countries, if not most, have similar or equivalent regulations for the licensing of surveyors. Such solutions have been introduced, among others, in England, Austria, Denmark and Greece.

The article presents the issues of rights in Poland, both in historical terms and their current state.

2. History of geodetic powers in the Polish lands

The history of geodetic qualifications in Poland can be divided into two main periods. The first was the time of functioning of the institution of sworn surveyors or previously sworn geometers. This period ended in 1952, from which the period of state permits and powers can be counted.

Entitlements before 1952

The first post-independence Polish legislation regulating the authority to perform surveying work was the 1925 Act on Sworn Surveyors [Act, 1925]. The Act replaced regulations on sworn surveyors issued in the former Austrian, Prussian and Russian partitions.

A sworn surveyor, according to the law, could be a person who was a Polish citizen, with voting rights, and has documented completion of relevant studies and apprenticeship and then passed the relevant exam. Graduation from one of the domestic or foreign schools recognized by the Ministry of Public Works was also considered completion of the relevant studies, in which case one had to demonstrate 5 years of practice, not 2 years as in other cases.

A candidate for surveyor had to pass a state exam before a commission appointed by the Minister of Public Works. The exam was of a practical nature and was to determine:

- "(a) sufficient professional training and ability to perform the activities of sworn surveyors independently, and*
- (b) knowledge of laws, regulations and instructions having to do with the profession of surveying."*

The sworn surveyor was authorized to perform the following work:

- field measurements along with related area and volume calculations;
- plans and cartographic works based on the measurements taken;

- projects including carrying out on the ground technical projects for dividing plots of land (parcelization), as well as technical projects for amalgamation and alignment (commasification and arondation);
- marking and regulating borders at the call of civilians or government authorities;
- checking and reviewing submitted plans and geometric calculations in the aforementioned works.

The sworn surveyor had the right to use a circular seal with the emblem of the State, bearing the title "sworn surveyor" and the name, first name and address of the surveyor's office. The sworn surveyor was personally responsible for the correctness, timeliness, conscientiousness and compliance with the requirements of science, technology and the applicable regulations for the work done. Violation of these rules could result in a warning, reprimand or revocation of the right to practice the profession even forever. The institution of a sworn surveyor formally existed until 1952 [Decree, 1952].

Entitlements 1 1952-1989

The Decree of April 24, 1952 on the State Surveying and Cartographic Service (amended in 1956 [Decree, 1956]) made the 1925 law no longer valid. The new regulations resolved the issue of authority to perform surveying work differently. The solutions that were adopted were more suited to the socialist system where private activity was an undesirable thing. The Decree stipulated that geodetic and cartographic works were performed by institutions and enterprises subordinate to the President of the Central Office of Geodesy and Cartography and the relevant Ministers. Persons employed in state offices, institutions and enterprises, enrolled in the register of surveyors and cartographers, were authorized to perform technical surveying activities. In 1956, some of these regulations saw amended provisions [Decree, 1956], eliminating, among other things, provisions for a register of surveyors and cartographers. The institution of a sworn surveyor was thus abolished. In place of the earlier solutions, the Law of July 1, 1958 on Permits for the Execution of Industry, Crafts, Trade and Certain Services by Non-Socialized Economy Units [Act, 1958] introduced rules for the conduct of surveying services by surveyors not employed by state enterprises. Conducting such activities involved the need to obtain a permit issued by the competent central authority. The granting of a permit could be subject to the possession of appropriate qualifications. Such a state of affairs was in force, with some changes introduced by the Act of July 18, 1974 on the performance of trade and certain other activities by non-socialized economic units [Act, 1974], until 1984.

This situation changed somewhat in 1984, when the Ordinance of the Minister of Administration and Spatial Planning dated January 16 on the provision of geodetic and cartographic services by non-socialized economic units [Regulation, 1984] came into force. The Ordinance specified the types of permits and the conditions under which these permits could be obtained. A permit could be obtained by an individual who was not employed in a socialized economy unit and who had the appropriate qualifications as evidenced by a certificate.

Certificates were issued by a qualification commission appointed by the President of the General Office of Geodesy and Cartography. The certificate could be obtained by a person who presented:

- documents confirming higher education in surveying and cartography and 6 years of professional practice, including 4 years in direct surveying, or secondary education in surveying and cartography and 10 years of professional practice, including 7 years in direct surveying;
- a review from the last place of work or a permit issued based on previous legislation and the opinion of the authority that issued the permit;
- review of the relevant provincial branch of the Association of Polish Surveyors;

- a description of the course of professional work, including activities performed in the field of surveying and cartography.

This documentation was the basis for admission to the examination before the qualification board on knowledge of the regulations applicable to surveying and cartography. Passing the exam resulted in the issuance of a certificate. The issuance of a certificate was sufficient for work in state units. Private activity required a permit. The certificate was issued in terms of:

1. performing detailed situational and height measurements and preparing maps for legal and design purposes;
2. demarcations and divisions of real estate;
3. geodetic realization and inventory measurements;
4. estimating real estate (land) for transfer of ownership, abolition of co-ownership, division of inheritance or expropriation;
5. acting as a supervisory inspector.

Other surveying work, including the establishment of the highest class matrices, gravimetric surveys, comprehensive compilation of base maps and land records, or the preparation of topographical maps, was reserved for state enterprises only. This state of affairs persisted until the May 17, 1989 Geodetic and Cartographic Law [Act, 1989] came into force.

By 1989, 19177 permits had been issued under the 1984 regulations. A detailed summary is shown in Table 1.

Tab.1 Permits granted between 1984 and 1989.

Type	Number
1. Situational and altimetric measurements and elaboration of their results	7080
2. Demarcations and divisions of real estate (land) and preparation of documentation for legal purposes	6073
3. Geodetic realization and inventory surveys	4656
4. Surveying services for investments	704
5. Agricultural and forestry surveying facilities	265
6. Land property estimation	343
7. Terrestrial photogrammetry	56

2. Types of professional rights

The Geodetic and Cartographic Law [Act, 1989] came into force just before the political changes in Poland. Its regulations, despite many changes and updates, are therefore often questioned and criticized. The law in its original version was 8 pages long (116 today) and introduced seven types of professional authorizations which, only with one change, have survived to this day. These were powers in the areas of:

1. geodetic situational and altimetric measurements of realization and inventory;
2. demarcation, division and estimation of real estate (land) and preparation of documentation for legal purposes;
3. basic surveying;

4. surveying services for investments;
5. surveying agricultural and forestry land;
6. map editing;
7. photogrammetry and remote sensing.

From 1989 to 1991, 6834 authorizations were issued. A detailed summary is shown in Table 2.

Table 2 Privileges granted between 1989 and 1991.

Type	Number
geodetic situational and altimetric measurements of realization and inventory;	3261
demarcation, division and estimation of real estate (land) and preparation of documentation for legal purposes;	2974
basic surveying;	9
surveying services for investments;	449
surveying agricultural and forestry lands;	113
map editing;	21
photogrammetry and remote sensing	6

By the Act of October 4, 1991, amending certain conditions for the preparation of housing projects in 1991-1995 and amending certain laws [Act, 1991], the powers of scope 2 were divided, removing from them "estimation of real estate (land)" which was already introduced as an additional scope 8.

From 1991 to 1998, 9683 licenses were issued. A detailed summary, excluding "real estate estimation," is shown in Table 3.

Table 3 Privileges granted between 1991 and 1998

Type	Number
geodetic situational and altimetric measurements of realization and inventory;	4198
demarcation, divisions (of land) and preparation of documentation for legal purposes;	4303
basic surveying;	35
surveying services for investments;	510
surveying agricultural and forestry lands;	463
map editing;	107
photogrammetry and remote sensing	22

The authority to estimate real estate eventually became a separate category of authority, and since then, the implementation of the Act of August 21, 1997 on Real Estate Management [Act,1997] has been regulated by this law. Thus, we currently have 7 types of surveying powers in Poland.

The regulations state that the authorization authorizes the performance of independent functions in the field of surveying and cartography, by which it means:

- Directing and directly supervising geodetic and cartographic works, which are subject to notification to the authority of the Geodetic and Cartographic Service, or performed on the order of this authority;
- To perform the activities of an expert in the field of geodetic work, which is subject to notification to the authority of the Geodetic and Cartographic Service or performed by order of this authority, and to exercise direct supervision over them;
- Acting as a surveying and mapping supervisor;
- Performing technical and administrative activities related to property demarcation;
- Performing surveying and mapping work necessary for making entries in land records, as well as work that could result in a danger to human health or life, in particular, delineating construction objects in the field, performing control measurements and performing measurements of displacements and deformations of construction objects.

It is noteworthy to see that to this day, the regulations do not specify the detailed scope of surveying and cartographic work for which particular scopes of authority are needed. Consequently, this often leads to problems of interpretation for example: can a geodesist authorized in scope 1, preparing a map for design purposes, perform works related to borders, if necessary ?

A total of 29228 allowances were granted between 1989 and 2022 in the following ranges.

Table 4 Entitlements granted between 1989 and 2022 (total).

No	Type	Number
1	geodetic situational and altimetric measurements of realization and inventory;	14398
2a	demarcation, division and estimation of real estate (land) and preparation of documentation for legal purposes;	2974
2b	demarcation, divisions (of land) and preparation of documentation for legal purposes;	8618
3	basic surveying;	113
4	surveying services for investments;	1823
5	surveying agricultural and forestry lands;	759
6	map editing;	356
7	photogrammetry and remote sensing	187

It is worth noting that in the field of demarcations, divisions and preparation of documentation for legal purposes, the numbers 2974 and 8618 should be added up, which gives 11592 surveyors authorisation in this field. Nevertheless, the most popular are the scope 1 authorizations which authorize basic surveying work.

It is also important here to point out the fact that the population of authorized surveyors is aging. In the last 3 years, 1,569 authorized surveyors have died (Table 5).

Table 5 Number of deletions of authorized surveyors

Reason	2019	2020	2021
Death	911	194	464

3. Qualification procedure

The qualification procedure for the granting of professional authorizations, despite modifications in recent years, has generally not changed much, and has remained unchanged in its essence for more than 30 years.

Requirements

According to current regulations, the requirement for applicants for professional qualifications, varies depending on the scope of the authorization. For all authorizations, the requirement is [Act, 1989]:

- having full legal capacity;
- no criminal record for crimes against the credibility of documents, and fiscal crimes, among others;
- possession of a higher, intermediate or intermediate professional degree in surveying;
- to have one year of professional practice if you have completed a second degree or a unified master's degree, 2 years of professional practice if you have completed a first degree, or 6 years of professional practice if you have a secondary or secondary professional surveying education;

Ranges 1, 2, 4 and 5 require demonstration of knowledge of regulations in the field of surveying and cartography (state exam), , verified during the state examination by the Qualification Team appointed from members of the Qualification Committee appointed by the Chief Surveyor of the Country. In the case of scopes 3, 6 and 7, such an exam is not required as long as the candidate shows a university diploma providing expertise in these scopes, and demonstrate professional practice described as necessary in the Regulation regulating the issue of granting permissions.

The professional practice required to obtain a license is shown in the professional practice log issued by the Chief Land Surveyor. The logbook must show participation in the surveying work indicated in the regulations, both in terms of type and number. In the logbook, the candidate shall describe the activities that he/she personally performed during the execution of the work in question. The candidate's participation in the work is confirmed in the logbook by the authorized surveyor in charge of the work.

The number of applications for entitlements in recent years has averaged about 450 per year. A detailed breakdown of applications by type of entitlement is shown in Table 6. It should be added that in 2020, despite the fact that 440 applications were submitted, only 318 people managed to pass the exam. The others took the exam only in 2021.

Table 6 Number of applications for allowances by range

no	name	2020	2021	2022
1	geodetic situational and altimetric measurements of realization and inventory;	256	328	209
2	demarcation, divisions (of land) and preparation of documentation for legal purposes;	138	154	119
3	basic surveying;	13	8	6
4	surveying services for investments;	19	34	28
5	Surveying agricultural and forestry lands;	2	8	6
6	map editing;	9	3	3
7	photogrammetry and remote sensing	3	0	2

Scope 1 entitlements are the most popular. Applications for this type of entitlement are almost twice as frequent as the second most common scope 2 entitlement. They are also generally the first entitlement a surveyor applies for.

Qualification procedure

The qualification procedure is conducted before a 5-member qualification team designated by the Chief Land Surveyor. The team is appointed from among the members of the Qualification Commission appointed by the Chief Land Surveyor. Currently, the commission is composed of 58 people [www.gugik.gov.pl].

The qualification procedure for those who have applied for authorization is generally conducted in two stages.

Stage I is the formal verification of the submitted application for qualification and the attachments to the application, including the logbook confirming professional practice. Verification is carried out by the qualification team. If the applicant has submitted an application in a procedure that does not require an exam (possible in the case of scopes 3, 6 and 7 of the authorizations) during this stage, verification of the condition of specialized education is also made [Act, 1989].

Stage II is an exam that tests knowledge of laws and regulations in the field of surveying and mapping. This stage takes place about a month after the verification stage and consists of three parts [Regulation 2020]:

- written test exam on knowledge of general legislation;
- written exam with open questions;
- oral exam.

The written exams are now computer-based. Each lasts 60 minutes. They consist of 60 questions and you can get 1 point for each question. The test is the same for each type of authorization. Each question has at least one correct answer. A question is scored successfully when the candidate marks all supported answers. Obtaining at least 41 points out of 60 possible points entitles the candidate to participate in the second part of the exam. The exam is checked automatically and upon completion the result is presented on the computer screen.

The second part, a written exam with open-ended questions, is also computer-based. The candidate answers 3 specialized questions from the field of authority for which he is applying. He/She also has 60 minutes to answer them. A maximum of 7 points can be earned for each of the 3 questions. The legal basis for the answer is also scored. During this part it is possible to use printed legal regulations. After

completing this part of the exam, the qualification team checks the answers given and awards points for each question. Obtaining a minimum of 15 points out of 21 possible points entitles you to participate in the oral part of the exam.

The oral exam is the last part of the qualification procedure. Those who have passed the written parts answer 3 more questions from the qualification team. The questions asked are entered into the minutes together with the result of this part. A positive result entitles a person to be entered in the register of surveyors authorized in a given field.

The pass rate for the exam in the last 3 years is between 60-70%, which should be considered a very good result. A tabular summary of the powers granted in 2013-2022 is shown in Table 7.

Table 7 Summary of vested entitlements from 2013 to 2022

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 (until 06. 2022)	total
Scope 1	262	321	119	128	149	138	260	73	240	140	1830
Scope 2	133	133	54	61	74	87	160	73	112	61	948
Scope 3	4	3	0	4	2	0	1	12	7	3	36
Scope 4	30	34	28	17	23	33	37	16	21	15	254
Scope 5	4	3	3	2	2	14	5	1	8	2	44
Scope 6	0	1	0	0	0	1	1	8	3	2	16
Scope 7	0	0	0	1	0	0	4	3	0	1	9
total	433	495	204	213	250	273	468	186	391	224	3137
pass rate	51 %	45 %	45 %	47 %	49 %	49 %	60 %	53 %	61 %	65 %	53%

The distribution of vested rights from 2013-2022 (June) by scope is shown in Figure 1.

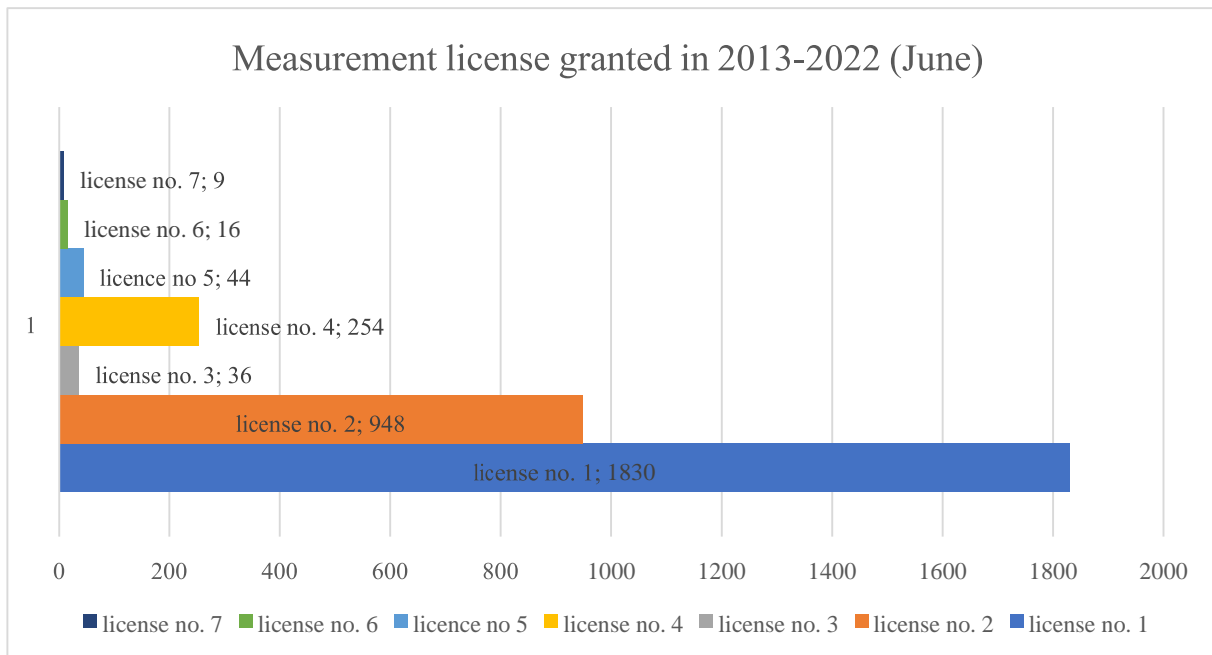


Fig. 1 Measure license granted in 2013-2022 (june) in Poland

4. Summary

According to the official figures from the Central Office of Geodesy and Cartography, by the end of June 2022, 48459 professional authorizations had been granted in Poland. Taking into account the fact that one surveyor may have several scopes of authorizations, this translates into a number of 24003 authorized surveyors. Additionally taking into account the deceased, there are currently 19223 authorized surveyors in Poland who hold 37705 different scopes of authorizations.

The history of granting authorizations has a long tradition in Poland. Even the institution of a sworn surveyor, often mentioned with great sentiment today, was preceded by a state exam.

Although the qualification procedure has not fundamentally changed since 1989, the details of its implementation have changed. This has resulted in changes in the number of both applications submitted and authorizations granted.

The qualification procedure, and in particular, the examination on knowledge of legal regulations is one of the last to be passed before gaining independence in the work of a surveyor. The granted qualification allows for credibility in the work of a surveyor, including the authority to direct surveying work and sign the resulting documentation with one's own name.

Bibliography

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[Act, 1958] - Act of July 1, 1958 on permits for the performance of industry, crafts, trade and certain services by units of the non-socialized economy;

[Act, 1974] - Act of July 18, 1974 on the performance of trade and certain other activities by non-socialized economy units;

[Act, 1989] - Act of May 17, 1989, geodetic and cartographic law;

[Act, 1991] - ACT of October 4, 1991 on the change of certain conditions for the preparation of housing investments in the years 1991-1995 and on the amendment of certain acts;

[Act, 1997] - Act of August 21, 1997 on real estate management;
[Decree, 1952] - Decree of April 24, 1952 on the state geodetic and cartographic service;
[Decree, 1956] - Decree of June 13, 1956 on the state geodetic and cartographic service;
[Regulation, 1984] - Regulation of the Minister of Administration and Spatial Management of January 16, 1984 on the provision of geodetic and cartographic services by non-socialized economy units;
[Regulation, 2020] - Regulation of the Minister of Development of 28 July 2020 on professional qualifications in the field of geodesy and cartography;
[www.gugik.gov.pl]

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