
COMPARATIVE STUDY OF ACCESSIBILITY STANDARDS FOR TOILETS IN SPECIAL SCHOOLS (SLB) IN CENTRAL JAVA

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ABSTRACT

This research examines the comparison of toilet accessibility standards in Special Schools (SLB) in Central Java Province against the provisions in the Regulation of the Ministry of Public Works and Housing (Permen PUPR) Number 14 of 2017 and the Americans with Disabilities Act (ADA). The background of this research is based on the importance of providing equal sanitation facilities for students with special needs, considering accessibility is a crucial aspect in supporting inclusivity and independence in the educational environment. The urgency of this research lies in the effort to identify the gap between the existing facility conditions and the applicable national and international standards. The research method used is descriptive-comparative through field observation, documentation, and comparative analysis of standards at several Special Schools (SLB) in the Central Java region. Each facility is evaluated based on spatial planning parameters, circulation, equipment dimensions, and supporting elements for people with disabilities. The research results show that although some special schools have adopted the principles of inclusive design, most toilet facilities have not fully met the minimum standards of Permen PUPR No. 14/2017, and even lag behind the provisions in the ADA, particularly in terms of corridor width, door width, door opening direction, and toilet area. This finding underscores the need for continuous evaluation and improvement of accessible facilities in educational environments to align with the principles of universal design and support equality for all students.

KEYWORDS: accessibility, the Americans with Disabilities Act, special schools, Indonesian National Standard, toilet

Penelitian ini mengkaji perbandingan standar aksesibilitas toilet di Sekolah Luar Biasa (SLB) di Provinsi Jawa Tengah terhadap ketentuan dalam Peraturan Menteri Pekerjaan Umum dan Perumahan Rakyat (Permen PUPR) Nomor 14 Tahun 2017 serta Americans with Disabilities Act (ADA). Latar belakang penelitian ini didasari oleh pentingnya penyediaan fasilitas sanitasi yang setara bagi siswa berkebutuhan khusus, mengingat aksesibilitas merupakan aspek krusial dalam mendukung inklusivitas dan kemandirian di lingkungan pendidikan. Urgensi penelitian ini terletak pada upaya untuk mengidentifikasi kesenjangan antara kondisi fasilitas eksisting dengan standar nasional maupun internasional yang berlaku. Metode penelitian yang digunakan adalah deskriptif-komparatif melalui observasi lapangan, dokumentasi, serta analisis perbandingan standar pada beberapa SLB di wilayah Jawa Tengah. Setiap fasilitas dinilai berdasarkan parameter tata ruang, sirkulasi, dimensi perlengkapan, serta elemen pendukung bagi penyandang disabilitas. Hasil penelitian menunjukkan bahwa meskipun sebagian SLB telah mengadopsi prinsip desain inklusif, sebagian besar fasilitas toilet belum sepenuhnya memenuhi standar minimal Permen PUPR No. 14/2017, bahkan masih tertinggal dibandingkan dengan ketentuan dalam ADA, khususnya pada aspek lebar selasar, lebar pintu, arah bukaan pintu, dan luas toilet. Temuan ini menegaskan perlunya evaluasi berkelanjutan serta peningkatan fasilitas aksesibel di lingkungan pendidikan agar sesuai dengan prinsip desain universal dan mendukung kesetaraan bagi seluruh siswa.

KATA KUNCI: aksesibilitas, Undang-Undang Penyandang Disabilitas Amerika, sekolah luar biasa, Standar Nasional Indonesia, toilet

INTRODUCTION

Inclusive education requires the availability of facilities accessible to all students, including those with special needs. Special Schools (SLB), as educational

institutions for people with disabilities, have a significant responsibility to provide a safe, comfortable, and supportive environment that promotes student independence. One important facility that is often overlooked in the context of

accessibility is the toilet. In fact, access to adequate sanitation facilities is a basic right for every individual, as stipulated in various national and international regulations.

Nationally, regulations regarding accessibility are governed by the Minister of Public Works and Housing Regulation (Permen PUPR) Number 14 of 2017 concerning Building Ease, which mandates that every public building provide facilities usable by all, including people with disabilities (Permen PUPR, 2017a). However, implementation in the field often does not fully meet the established standards. This is also supported by research by Siregar et al. (2024), which found that in some special schools in South Bengkulu, there are still accessibility barriers, both physical and non-physical, for children with intellectual disabilities.

Additionally, Maimunah et al. (2024), in their literature review on inclusive public infrastructure in Indonesia, emphasize that the application of universal design principles to public facilities still faces many obstacles, both from the planning perspective and the awareness of the facilities' providing institutions. This condition indicates that the issue of accessibility in educational environments still requires serious attention, including in the provision of standard-compliant sanitation facilities.

Accessibility in educational facilities should not only be understood as compliance with technical regulations but also as the fulfillment of the rights of persons with disabilities to access public services independently and equally. Mastari (2025) emphasizes that accessibility is a fundamental right that must be guaranteed through the provision of inclusive environments and facilities. In the context of education, Bahari et al. (2023) argue that the application of inclusive design principles is essential to ensure equal access and opportunities for students with disabilities within school environments. Similarly, Yahya (2020) highlights that accessibility in special schools should be implemented comprehensively, encompassing circulation systems, supporting facilities, and spatial arrangements that enable students with disabilities to perform activities safely, comfortably, and independently.

On the other hand, international standards such as the Americans with Disabilities Act (ADA) have long been a global reference in the implementation of accessible design, including the arrangement of corridor width dimensions, door width, door opening direction, and toilet area. A comparison between Permen PUPR No. 14/2017 and ADA is expected to provide a broader perspective on the ideal standards for toilet facilities for people with disabilities.

Central Java was chosen as the research location because the province has a significant number of special schools with varying building characteristics. Through a descriptive-comparative approach, this

study aims to identify the level of suitability of toilet facilities in Special Schools (SLB) in Central Java against these national and international standards. The results of this research are expected to provide input for local governments, school authorities, and building designers in improving the quality of inclusive educational facilities that are in accordance with universal design principles.

Novelty

The discussion begins with the study conducted by Liritantri et al. (2021), which examines accessibility within the context of inclusive education. The study highlights that fulfilling the needs of people with disabilities requires comprehensive adjustments in building structure and infrastructure, indicating that the implementation of inclusive environments still faces significant challenges. However, the study remains general in scope and does not specifically address sanitation facilities as a crucial element in supporting user independence (Liritantri et al., 2021).

Subsequently, the study by Janati and Nurhasan (2024) investigates the accessibility of toilet facilities in SLB N Karanganyar. The findings reveal that the toilet facilities do not meet the technical standards required for wheelchair users, with only 20% compliance, while the remaining 80%—including spatial dimensions, doors, handrails, and signage—are inadequate. Although this study provides a detailed technical evaluation, it is limited to a single case study and does not incorporate comparisons with other standards as a broader evaluative benchmark (Janati & Nurhasan, 2024).

Furthermore, the study conducted by Prajalani and Himawanto (2017) examines accessibility facilities in SLB Negeri Sukoharjo in a more comprehensive manner. The results indicate that existing facilities have not fully adhered to national standards, resulting in various barriers for people with disabilities in accessing the school environment independently. Nevertheless, this study primarily focuses on compliance with a single national standard and does not critically assess the quality of the standard itself within a broader context (Prajalani & Himawanto, 2017).

Overall, the progression of studies over time demonstrates that research trends tend to focus on partial accessibility evaluations, case-specific analyses, and reliance on national standards, without conducting comparative studies that critically assess the quality and comprehensiveness of these standards.

Therefore, the novelty of this research lies in its comparative approach between national and international standards, namely the Indonesian Regulation of the Minister of Public Works and Housing No. 14 of 2017 issued by the Kementerian Pekerjaan Umum dan Perumahan Rakyat and the

Americans with Disabilities Act (ADA). This study not only evaluates the compliance of toilet facilities in Special Schools (SLB), but also utilizes data from SLBs in Central Java to analyze differences in quality, completeness, and depth of parameters between the standards, thereby providing a more comprehensive and critical understanding for the development of more inclusive accessibility standards in Indonesia.

Permen PUPR Number 14 Chapter 3 of 2017

Peraturan Menteri Pekerjaan Umum dan Perumahan Rakyat (Permen PUPR) is a regulation issued by the Ministry of PUPR to govern various matters related to public works and public housing in Indonesia, such as organizational structure and work procedures, guidelines for the preparation of construction cost estimates, safety standards, and building requirements.

This study examines several accessibility requirements for toilets in special schools:

1. Toilet corridor

These requirements refer to *Peraturan Menteri Pekerjaan Umum dan Perumahan Rakyat Republik Indonesia Number 14 Chapter 3 of 2017*, including:

- The corridor must have an effective width sufficient for one wheelchair user and a single person to pass each other, with a minimum width of 152 cm.
- The corridor is not allowed to use slippery floor covering materials.

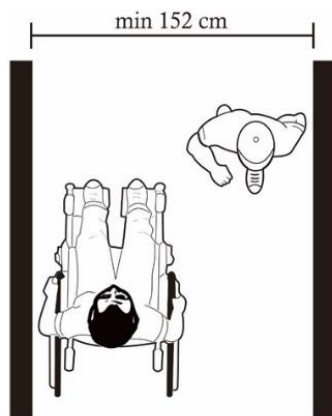


Figure 1. Toilet Corridor Regulation
(Source: Lampiran II, Permen PUPR, 2017b)

2. Toilet

The requirements for accessible toilets refer to *Peraturan Menteri Pekerjaan Umum dan Perumahan Rakyat Republik Indonesia Number 14 Chapter 3 of 2017*, including:

- The minimum toilet area is 3.75 m².
- The standard door dimensions are 200 cm in height and 92 cm in width.
- The door must be easy to open, either manually or automatically.

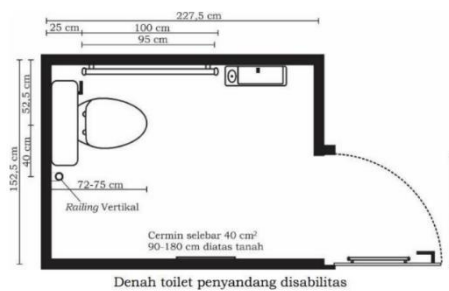


Figure 2. Toilet Corridor Regulation
(Source: Lampiran II, Permen PUPR, 2017b)

American with Disabilities Acts

The Americans with Disabilities Act (ADA) is a federal law in the United States aimed at protecting persons with disabilities from various forms of discrimination. The Act divides its protections into several sections (Titles), which regulate the rights and obligations of both individuals and institutions in the public and private sectors.

Title I governs the rights of persons with disabilities in employment, ensuring that they are able to perform the essential functions of a job, with or without reasonable accommodation. Title II regulates access for persons with disabilities to government services, programs, and activities, while Title III addresses accessibility in the private sector, the majority of whose facilities are open to the public. Nevertheless, facility operators remain responsible for ensuring that such places are usable by persons with disabilities (Blanck, 2023).

On September 15, 2010, the United States Department of Justice issued new regulations for Title II and Title III of the Americans with Disabilities Act of 1990. These regulations resulted in the 2010 ADA Standards for Accessible Design, which establish the minimum requirements to ensure that newly constructed or renovated government buildings, public facilities, and commercial facilities are accessible to and usable by persons with disabilities (ADA, 2010).

These requirements refer to the Americans with Disabilities Act (ADA), including:

1. Toilet corridors

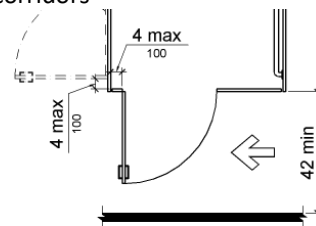


Figure 604.8.1.2 Wheelchair Accessible Toilet Compartment Doors

Figure 3. Toilet Corridors Regulation
(Source: Americans with Disabilities Act (ADA) Standards, Section 604.8.1.2 Doors, 2010)

The minimum required corridor width is 100 cm, which is intended to ensure smooth circulation and adequate maneuvering space for wheelchair users and individuals with mobility aids.

2. Door opening width

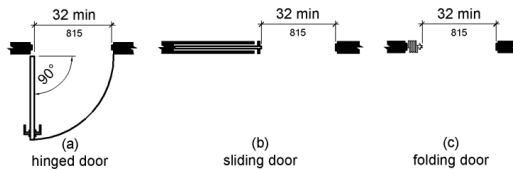


Figure 404.2.3
Clear Width of Doorways

Figure 4. Door opening width Regulation

(Source: Americans with Disabilities Act (ADA) Standards, Section 404.2.3 Clear Width, 2010)

The minimum clear door opening width is 81.5 cm, allowing wheelchair users to enter and exit the toilet space safely and without physical obstruction.

3. Toilet area

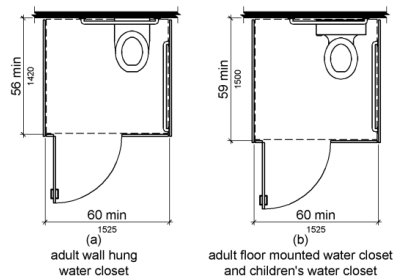


Figure 604.8.1.1
Size of Wheelchair Accessible Toilet Compartment

Figure 5. Toilet Area Regulation

(Source: Americans with Disabilities Act (ADA) Standards, Section 604.8.1.1 Size, 2010)

The minimum required toilet area is 2.1 m², which provides sufficient space for basic movement, user comfort, and accessibility for persons with disabilities.

METHODS

This study employed a descriptive-comparative method to evaluate the feasibility of special schools in the Central Java region, using a sample of five schools as case studies. The collected data included floor plans, spatial layouts, and detailed information on the bathroom facilities available at each school. These data served as the basis for assessing the accessibility level of the bathrooms and comparing it against the relevant standards, namely the Ministry of Public Works and Housing Regulation and the Americans with Disabilities Act (ADA). The comparison process involved describing the existing conditions of toilet facilities in the field and subsequently analyzing their degree of compliance with both national and international accessibility standards.

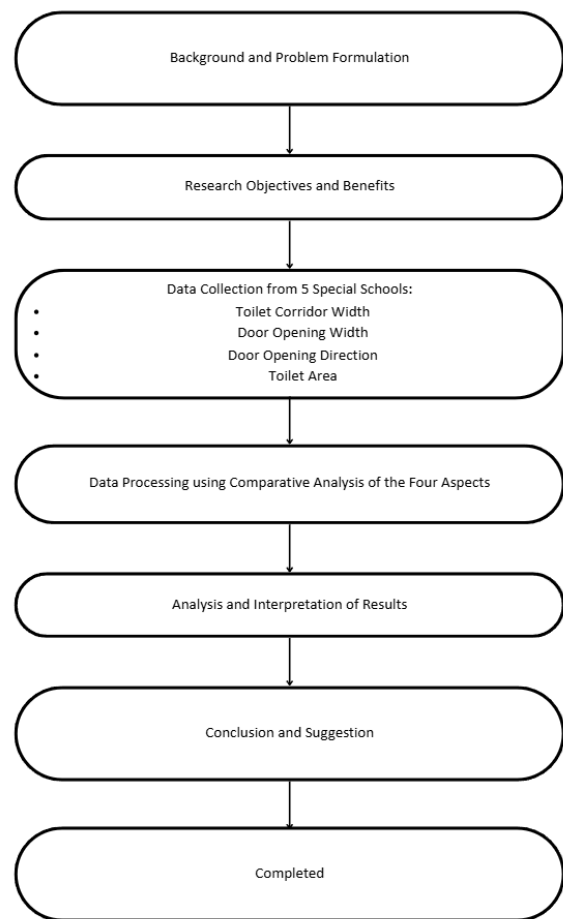


Figure 6. Research Method Flowchart
(Source: Author's Document, 2026)

Research Location

This research is located in 5 special schools in Central Java, including:

1. Surakarta State Special School
2. Mandiri Putra Karanganyar Special School
3. Pati State Special School
4. Mutiara Bangsa Kendal Special School
5. Salatiga State Special School

These schools were selected as the research locations because they are part of a government-supported revitalization program in 2025, facilitated by the Kementerian Pekerjaan Umum dan Perumahan Rakyat in collaboration with Universitas Sebelas Maret. This condition provides a relevant context for evaluating accessibility standards, as the schools are either undergoing renovation or being newly constructed.

The revitalization process includes spatial reorganization and the addition of supporting facilities, making these schools appropriate case studies for assessing the implementation of accessibility standards, particularly for toilet facilities.

Data Collection

Data collection in this study was carried out by gathering documents and working drawings from each Special School in Central Java. The data collected includes floor plans, layouts, and detailed drawings of the bathroom facilities available at each school. This information serves as the primary basis for analyzing the level of accessibility of the toilet facilities and comparing it with applicable standards, namely the regulation issued by the Kementerian Pekerjaan Umum dan Perumahan Rakyat and the Americans with Disabilities Act (ADA).

In addition, this study applies a purposive sampling technique. The selected samples consist of five Special Schools that are included in the 2025 government-supported revitalization program, facilitated by the Kementerian Pekerjaan Umum dan Perumahan Rakyat in collaboration with Universitas Sebelas Maret. This selection ensures that the data represent recent conditions of school facilities that are either being renovated or newly constructed, making them relevant for evaluating current accessibility implementation.

Furthermore, field data were collected through direct observation, on-site measurement, and documentation. Measurements were conducted using a tape measure to obtain accurate dimensions of key accessibility elements, such as room size, door width, circulation space, and supporting features like handrails. The documentation process was carried out through photographs and field notes to support the analysis.

All collected data were then systematically compared with the established accessibility standards to evaluate the level of compliance and identify gaps in the implementation of inclusive design in toilet facilities.

RESULTS AND DISCUSSION

This comprehensive section presents detailed analytical findings from the investigation of accessibility implementation in special schools. The results indicate both the feasibility and infeasibility of current practices in meeting existing regulations as well as broader sustainability objectives. All findings are contextualized within current literature and evaluated against established building performance and accessibility standards.

Field Conditions

The data analysis was conducted by collecting the Detailed Engineering Design (DED) drawings from each SLB, which included detailed drawings of the toilets. The detailed drawings contained information on toilet dimensions, door width, door swing direction, and toilet corridor. These data were then compiled and

compared with the standards set forth in Permen PUPR No. 14 of 2017 and the Americans with Disabilities Act (ADA).

The details from the Detail Engineering Design (DED) drawings of each SLB can be seen in the table below:

1. Surakarta State Special School

Table 1. Data of Surakarta State Special School

Variable	Specification
Toilet corridors (cm)	200
Door opening width (cm)	90
Door opening direction	Outward
Toilet area (sqm)	4

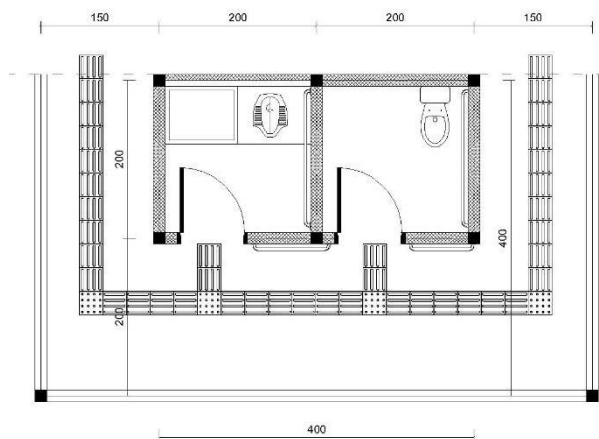


Figure 7. Toilet Floorplan of Surakarta State Special School (Source: Surakarta State Special School's Document, 2025)



Figure 8. Toilet of Surakarta State Special School (Source: Author's Document, 2025)

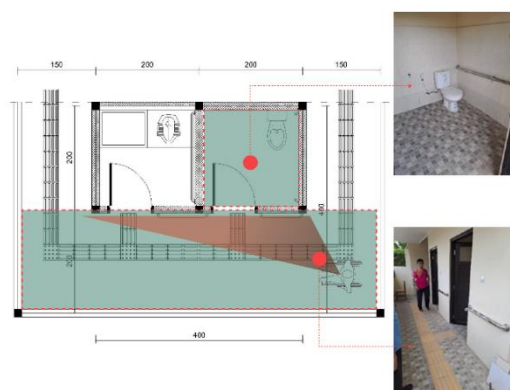


Figure 9. Keyplan Toilet of Surakarta State Special School (Source: Author's Document, 2025)

At Surakarta State Special School, field observations indicate that the main corridor has a width of 200 cm. This corridor serves as the primary circulation route connecting the classroom area to the toilet facilities and provides sufficient maneuvering space for wheelchair users as well as their companions. The width of the toilet door opening was measured at 90 cm with an outward-opening direction. This door swing facilitates easier access for users and prevents obstruction of movement within the toilet space.

Meanwhile, the toilet space has an area of approximately 4 sqm. The space consists of a seated toilet area with sufficient maneuvering space in the front and on both sides. The floor surface uses rough-textured ceramic tiles to prevent slipping, and the door threshold is designed to be level with the corridor floor to ensure accessibility for wheelchair users.

Overall, the layout and dimensions of the toilet space at SLB Negeri Surakarta indicate a considerable effort to provide adequate accessibility for users with special needs, particularly in terms of ease of mobility and safety during use.

2. Mandiri Putra Karanganyar Special School

Table 2. Data of Mandiri Putra Karanganyar Special School

Variable	Specification
Toilet corridors (cm)	150
Door opening width (cm)	90
Door opening direction	Outward
Toilet area (sqm)	3

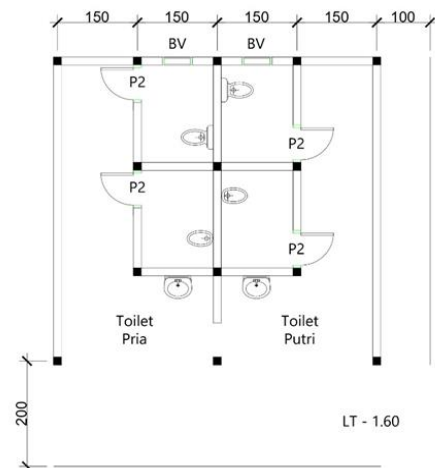


Figure 10. Toilet Floorplan of Mandiri Putra Karanganyar Special School

(Source: Mandiri Putra Karanganyar Special School's Document, 2025)



Figure 11. Toilet of Mandiri Putra Karanganyar Special School

(Source: Author's Document, 2025)

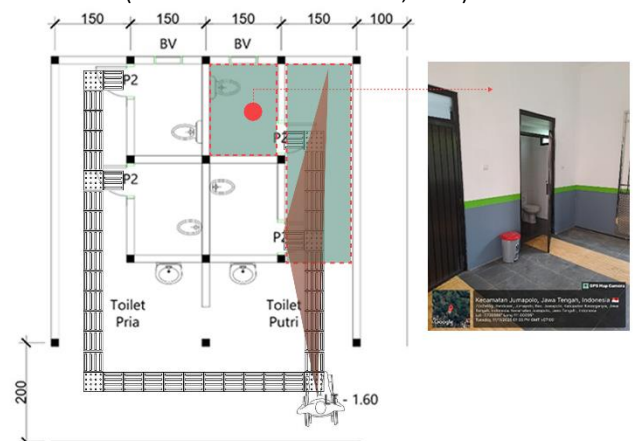


Figure 12. Keyplan Toilet of Mandiri Putra Karanganyar Special School

(Source: Author's Document, 2025)

The width of the corridor leading to the toilet area at Mandiri Putra Karanganyar Special School was recorded at 150 cm. This corridor width still allows user movement, including wheelchair users, although the available maneuvering space is relatively more limited compared to wider corridors.

The toilet door opening was measured at 90 cm with an outward-opening direction. Both the door width and swing direction are considered adequate to support ease of access for users when entering and exiting the toilet, while also minimizing spatial obstruction within the toilet area.

It was recorded at approximately 3 sqm. This area accommodates the toilet fixture and user movement space; however, the available maneuvering space is relatively limited and should be taken into consideration in relation to compliance with applicable accessibility standards.

3. Pati State Special School

Table 3. Data of Pati State Special School

Variable	Specification
Toilet corridors (cm)	200
Door opening width (cm)	95

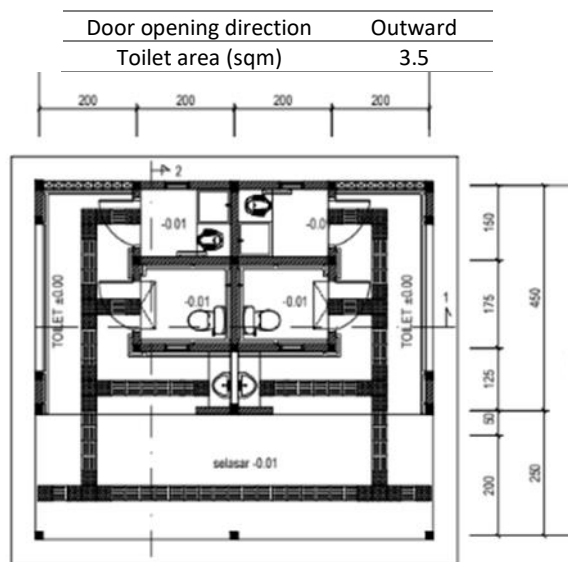


Figure 13. Toilet Floorplan of Pati State Special School
(Source: Pati State Special School's Document, 2025)



Figure 14. Toilet of Pati State Special School
(Source: Pati State Special School's Document, 2025)

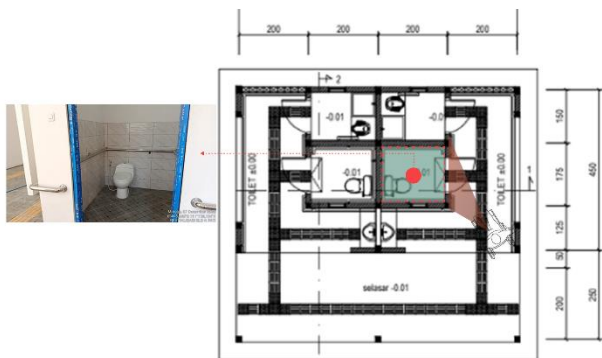


Figure 15. Keyplan Toilet of Pati State Special School
(Source: Pati State Special School's Document, 2025)

At Pati State Special School, the main corridor has a width of approximately 200 cm and functions as a connecting route between the classroom areas and the toilet facilities. This width creates a spacious impression and facilitates movement for wheelchair users without requiring excessive maneuvering. The corridor floor surface is level and does not have significant changes in elevation, thereby supporting comfortable mobility.

In the toilet area, four toilet units were identified, consisting of two doors with a width of 90 cm and two doors with a width of 95 cm. All four doors open outward, allowing the interior toilet space to remain unobstructed and unaffected by the door swing.

Meanwhile, the toilet areas were measured at 3 sqm and 3.5 sqm. Each space has a relatively efficient layout, with the toilet fixture positioned along the wall and maneuvering space provided in the front area. Minor differences in dimensions affect the degree of maneuvering clearance; however, both layouts still provide adequate accessibility. The floor material consists of lightly textured ceramic tiles that are non-slip and feature a gentle slope toward the drainage.

Overall, the toilet conditions at Pati State Special School demonstrate a simple spatial arrangement that nonetheless considers user comfort and safety. The spatial proportions and door openings support ease of access, particularly for students with special mobility needs.

4. Mutiara Bangsa Kendal Special School

Table 4. Data of Mutiara Bangsa Kendal Special School

Variable	Specification
Toilet corridors (cm)	200
Door opening width (cm)	60
Door opening direction	Inward
Toilet area (sqm)	3

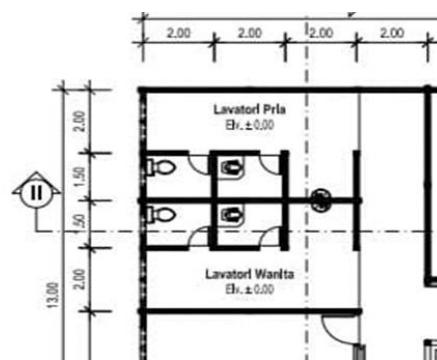


Figure 16. Toilet Floorplan of Mutiara Bangsa Kendal Special School
(Source: Mutiara Bangsa Kendal Special School's Document, 2025)



Figure 17. Toilet of Mutiara Bangsa Kendal Special School
(Source: Mutiara Bangsa Kendal Special School's Document, 2025)

limited due to the washbasin position and the inward-opening door, the spatial layout remains functional for users with light mobility needs. The toilet floor is finished with smooth-textured ceramic tiles and features a gentle slope toward the drainage to prevent water accumulation.

Overall, the toilet facilities at Salatiga State Special School demonstrate consideration of

functional aspects; however, the placement of the washbasin in front of the door could be a point for future improvement to enhance accessibility comfort.

Comparison Results

The results of the analysis of various special schools are categorized according to the variables of the objects of analysis, as follows:

Table 6. Results of the Comparative Analysis of Special Schools

Variabel	Special School (SLB)					Standard Regulations	
	Surakarta State	Mandiri Putra Karanganyar	Pati State	Mutiara Bangsa Kendal	Salatiga State	PermenPU No. 14 of 2017	ADA
Toilet corridors (cm)	200	150	200	200	240	140	100
Door opening width (cm)	90	90	95	60	92	92	81,5
Door opening direction	Outward	Outward	Outward	Inward	Inward	No Regulated	Outward
Toilet area (sqm)	4	3	3,5	3	3,84	3,7	2,1

1. Corridor width: Based on the comparative analysis, corridor widths across the five special schools (SLB) range from 150 cm to 240 cm. SLB Negeri Surakarta, SLB Negeri Pati, and SLB Mutiara Bangsa Kendal have corridor widths of 200 cm, SLB Mandiri Putra Karanganyar 150 cm, and SLB Negeri Salatiga 240 cm.

When compared with the standards of the Ministry of Public Works Regulation No. 14 of 2017 (≥ 140 cm) and the ADA (≥ 100 cm), all schools comply with the minimum requirements, as the corridor widths in each case exceed the prescribed thresholds.

2. Door opening width: Door widths also vary among the schools, namely 90 cm (SLB Negeri Surakarta), 95 cm (SLB Negeri Pati), 60 cm (SLB Mutiara Bangsa Kendal), 90 cm (SLB Mandiri Putra Karanganyar), and 92 cm (SLB Negeri Salatiga).

Relative to the Ministry of Public Works Regulation No. 14 of 2017 (92 cm) and the ADA (81.5 cm), the following conditions are identified:

- SLB Negeri Surakarta (90 cm) does not comply with the national regulation, but complies with the ADA
- SLB Negeri Pati (95 cm) complies with both standards
- SLB Mutiara Bangsa Kendal (60 cm) does not comply with either standard
- SLB Negeri Salatiga (92 cm) complies with both standards
- SLB Mandiri Putra Karanganyar (90 cm) complies with the national regulation but does not comply with the ADA.

Thus, only SLB Negeri Pati and SLB Negeri Salatiga fully comply with both door width standards.

3. Door opening direction: The doors at SLB Negeri Surakarta, SLB Mandiri Putra Karanganyar, and SLB Negeri Pati open outward, whereas those at SLB Mutiara Bangsa Kendal and SLB Negeri Salatiga open inward.

Although neither the Ministry of Public Works Regulation No. 14 of 2017 nor the ADA explicitly regulates door swing direction, from an accessibility design perspective, outward-opening doors are generally considered safer for persons with disabilities. Accordingly, three schools (SLB Negeri Surakarta, SLB Mandiri Putra Karanganyar, and SLB Negeri Pati) align more closely with accessibility design principles than the other two.

4. Toilet area: The toilet area in each school ranges from 3 m² to 4 m², specifically: 4 m² at SLB Negeri Surakarta, 3 m² at SLB Mandiri Putra Karanganyar, 3.5 m² at SLB Negeri Pati, 3 m² at SLB Mutiara Bangsa Kendal, and 3.84 m² at SLB Negeri Salatiga.

When compared with the standards set by the Ministry of Public Works Regulation No. 14 of 2017 (3.7 m²) and the ADA (2.1 m²), the following results are obtained:

- SLB Negeri Surakarta (4 m²) complies with both standards
- SLB Mandiri Putra Karanganyar (3 m²), SLB Negeri Pati (3.5 m²), SLB Mutiara Bangsa Kendal (3 m²) do not comply with the national regulation, but comply with the ADA

- SLB Negeri Salatiga (3.84 m²) complies with both standards.

Therefore, only SLB Negeri Surakarta and SLB Negeri Salatiga fully meet both toilet area

standards, whereas the other three schools comply only with the international ADA standard.

Table 7. Results of the Comparative Analysis of Special Schools

Variabel	Field Data Range	PermenPU No. 14 of 2017	ADA	Result
Toilet corridors (cm)	≥140cm	140cm	100cm	Meets both
Door opening width (cm)	60-90cm	92cm	81,5cm	Partial
Door opening direction	Outward	No Regulated	Outward	Meets ADA
Toilet area (sqm)	3-3,5m ²	3,7 m ²	2,1 m ²	Partial

The comparison between field findings and standards from the Kementerian Pekerjaan Umum dan Perumahan Rakyat (Permen PUPR No. 14 of 2017) and the Americans with Disabilities Act (ADA) shows that most elements meet basic accessibility requirements, but inconsistencies remain in door width and toilet area.

These discrepancies are mainly caused by spatial limitations in renovation projects, prioritization of functional usability over strict compliance, and limited supervision during implementation. As a result, several facilities meet ADA minimum standards but fail to comply with the more demanding Indonesian standards.

This finding aligns with previous studies by Janati and Nurhasan (2024), as well as Prajalani and Himawanto (2017), which reported that SLB facilities still do not fully meet accessibility standards. Similar issues have also been identified in other public facilities. Putra et al. (2025) found that accessibility barriers in healthcare buildings are frequently associated with inadequate circulation space and insufficient supporting facilities for wheelchair users. Furthermore, Reach (2026) highlights that accessible environments contribute significantly to independence and social participation among people with disabilities. In the context of sanitation facilities, Dwi (2025) and Dolphin Solutions (2026) emphasize that accessible toilets should not only satisfy dimensional standards but also provide safety, comfort, and dignity for users. These perspectives support the importance of improving toilet accessibility in special schools as part of a broader effort to create inclusive educational environments.

CONCLUSION

Based on the analysis of accessibility variables, including corridor width, door width, door opening direction, and toilet area across five Special Schools (SLB), it can be concluded that most schools have generally met accessibility standards as stipulated in

the regulation issued by the Kementerian Pekerjaan Umum dan Perumahan Rakyat (Permen PUPR No. 14 of 2017) and the Americans with Disabilities Act (ADA). All SLBs have corridor widths that comply with both standards, indicating that circulation space is generally adequate for users with disabilities.

However, several inconsistencies remain in the door width and toilet area. SLB Mutiara Bangsa Kendal has a door width of 60 cm, which does not meet either standard, while SLB Negeri Surakarta (90 cm) does not comply with the national standard but still meets ADA requirements. In terms of toilet area, three SLBs, Mandiri Putra Karanganyar (3 m²), Negeri Pati (3.5 m²), and Mutiara Bangsa Kendal (3 m²), do not meet national standards, although they still comply with ADA standards. Overall, the level of compliance indicates that the implementation of inclusive design principles is relatively good, but several elements still require improvement to fully meet both national and international standards.

From the comparison of dimensional standards, it can be observed that Indonesian regulations tend to adopt more generous spatial requirements, such as a corridor width of 140 cm and a toilet area of 3.7 m², compared to ADA, which allows smaller minimum dimensions (100 cm corridor width and 2.1 m² toilet area). This suggests that the regulation by the Kementerian Pekerjaan Umum dan Perumahan Rakyat places greater emphasis on providing wider movement space, supporting better comfort and maneuverability for wheelchair users.

On the other hand, ADA reflects a more flexible and performance-based approach, allowing minimum dimensions that are still functionally accessible and easier to implement across various building conditions. Therefore, it can be concluded that Indonesian standards are more spatially inclusive in terms of dimensional generosity, while ADA is more adaptive in its application. A more effective accessibility standard could be achieved by combining the strengths of both approaches.

From this study, several design recommendations can be proposed. The ideal corridor width should be at least 140 cm to ensure safe and comfortable wheelchair circulation. Door widths should ideally follow 92 cm to maximize accessibility, and toilet doors should open outwards to improve safety and usability. For the toilet area, a minimum of 3.7 m² is recommended to provide sufficient maneuvering space.

The findings also have important implications for policymakers and designers. For the government, particularly the Kementerian Pekerjaan Umum dan Perumahan Rakyat, the results highlight the need to strengthen supervision and implementation of accessibility standards, as well as to consider harmonizing national regulations with international benchmarks such as ADA. For designers, this study emphasizes the importance of not only meeting minimum standards but also adopting more inclusive and user-oriented design approaches to ensure independence, safety, and comfort for people with disabilities.

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