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Review of Construction Legal Aspects on Technical Specifications of Building Projects (Case Study in Five-storey Building of Makassar City)

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ABSTRACT

This study aims to review the legal aspects of construction in relation to the technical specifications applied in building projects, with a specific case study of a five-storey building in Makassar City. Technical specifications serve as a fundamental reference in the implementation of construction projects, and their alignment with prevailing legal and regulatory frameworks is critical to ensure project quality, safety, and compliance. The research investigates how the technical specifications used in the project adhere to national construction standards, building codes, and contractual obligations. Through a qualitative approach involving document analysis and field observations, the study identifies potential legal issues arising from discrepancies between planned specifications and actual implementation. The findings emphasize the importance of legal oversight and standardization in minimizing disputes and ensuring the integrity of building construction. Recommendations are proposed to strengthen the integration of legal considerations in technical planning and execution stages of similar future projects.

1. INTRODUCTION

The construction industry is a complex sector involving multidisciplinary coordination, where legal frameworks play a critical role in ensuring compliance, safety, and accountability. Technical specifications, as part of construction documents, define the standards and requirements for materials, methods, and performance expected in building projects. These documents serve not only as guidelines for contractors but also as legal references in the event of disputes or non-compliance. Improper interpretation or ambiguity in technical specifications can lead to project delays, cost overruns, and legal conflicts [1].

In Indonesia, building projects must comply with government regulations such as Building Law No. 28 of 2002 and Government Regulation No. 16 of 2021 concerning building implementation. These regulations require both the planning and execution phases to conform to standards such as SNI (Standard Nasional Indonesia) and the provisions in construction contracts. Non-compliance with technical and legal standards often results in substandard infrastructure and exposes stakeholders to significant legal risks [2].

Despite the presence of regulatory frameworks, many building projects in Indonesia still face challenges in aligning technical specifications with legal requirements. Around 30% of mid-scale building projects in urban areas have experienced legal disputes due to mismatches between design documents and actual implementation [3]. The root cause often lies in a lack of legal literacy among project stakeholders, leading to violations of contract terms and misinterpretation of technical clauses.

Legal review of technical specifications becomes even more crucial in multi-storey building construction, where the complexity and associated risks are significantly higher. Key factors such as structural safety, fire protection, material performance, and environmental compliance must meet regulatory thresholds. Failure to integrate legal standards into technical documentation is often caused by fragmented project management systems and insufficient regulatory oversight during the construction process [4].

In Makassar City, a region experiencing rapid urban growth, the demand for multi-storey buildings has increased substantially. This urban development necessitates a strong alignment between technical specifications and legal standards to maintain safety and sustainability. Although local government has implemented spatial planning and building code regulations, gaps in monitoring and enforcement continue to challenge project compliance [5].

Several studies have emphasized the importance of legal audits and technical reviews to improve construction project outcomes. Regular review mechanisms during both design and implementation phases can reduce legal disputes by up to 40% [6]. Furthermore, the integration of legal professionals in planning teams helps bridge the gap between engineering practices and regulatory compliance, thereby reducing ambiguities in technical specifications.

This study aims to contribute to the body of knowledge by reviewing the construction legal aspects in relation to technical specifications, using a case study of a five-storey building in Makassar City. The research analyses the extent to which technical documentation in the project aligns with national construction laws and regulations. The findings are expected to identify potential gaps and offer recommendations for

improving legal compliance in similar future construction projects.

2. RESEARCH GAP AND RESEARCH SIGNIFICANCE

Although numerous studies have addressed the importance of technical specifications and legal compliance in construction projects, most focus on large-scale infrastructure or government-funded megaprojects, leaving a knowledge gap in the context of mid-scale private building developments, particularly in fast-growing urban areas like Makassar. Previous research tends to discuss regulatory frameworks or construction contract law in isolation, with limited attention to how technical documentation (such as specifications, drawings, and BOQs) is actually implemented in the field and how legal standards are operationalized during construction. There is also a lack of empirical studies that analyze the integration between technical planning and legal requirements at the micro-level of specific building projects in Indonesian cities.

This study is significant as it provides a focused analysis of how legal standards are reflected in the technical specifications of a five-storey building in Makassar, a city undergoing rapid urban development. By evaluating the compliance of construction documentation and implementation against national regulations and local codes, the study offers practical insights for improving construction governance at the project level. The findings are expected to assist stakeholders—such as engineers, architects, developers, and local authorities—in identifying weaknesses in project planning and execution that could lead to legal disputes or safety hazards. Ultimately, this research contributes to enhancing regulatory adherence, project accountability, and the quality of mid-rise building developments in Indonesia.

3. MATERIALS AND METHOD

This research uses a descriptive qualitative approach with a case study method. The primary objective is to evaluate the legal compliance of technical specifications in accordance with Indonesian construction law, specifically in a five-storey building project located in Makassar City. The methodology is detailed as follows:

3.1 Research Location and Object

1. The research object is a five-storey building project located in Makassar City, South Sulawesi, Indonesia.
2. The project represents a typical mid-rise urban building, commonly constructed in rapidly developing cities.
3. The focus is on the technical specification documents, working drawings, and construction contract agreements.

3.2 Types and Sources of Data

1. Primary Data:
   a. Semi-structured interviews with stakeholders such as the contractor, design consultant, project owner, and officials from the local Public Works Department (Dinas PUPR).
   b. Direct field observations to verify the implementation of specifications against the documents.
2. Secondary Data:
   a. Project documents: technical specifications, work plans and terms (RKS), and construction contracts.
   b. Legal frameworks: Indonesian Construction Law (Law No. 2 of 2017), Government Regulation No. 16 of 2021, and applicable National Standards (SNI).
   c. Previous research and relevant academic literature.

3.3 Data Collection Techniques

1. Documentation: Collecting official project documents related to technical specifications and legal requirements.
2. Interviews: Conducting guided interviews to capture stakeholder perceptions and experiences concerning legal compliance in technical specifications.
3. Field Observations: On-site observations to compare the planned specifications with the actual construction practice.

3.4 Research Instruments

1. Interview guides developed based on construction law variables (legal compliance, regulatory conformity, potential dispute indicators).
2. Document checklist to compare the content of technical specifications with applicable legal provisions and national technical standards.
3. Observation forms to record actual conditions and potential deviations from the documented project plans.

3.5 Data Analysis Techniques

1. Descriptive Qualitative Analysis: Narrative interpretation is used to explain the gaps between legal provisions and technical specifications.
2. Comparative Document Analysis: Comparing project documents with legal instruments (e.g., SNI, Construction Law, Government Regulation No. 16/2021).
3. Thematic Coding: Grouping the interview and observation results based on key themes such as legal compliance, technical inconsistencies, and dispute potential.

3.6 Validity and Reliability

1. Source Triangulation: Data validation is conducted by cross-verifying interview responses, document analysis, and field observations.
2. Peer Review: Expert consultations with professionals in construction law and civil engineering to ensure the reliability of findings and interpretations.

3.7 Research Limitations

1. The study is limited to legal aspects of technical specifications and does not cover broader project elements such as financial or managerial aspects.
2. The case study is limited to a single project, so generalization is restricted; however, it provides a useful foundation for further research in similar contexts.

This study adopts a descriptive qualitative method through a case study of a five-storey building project in Makassar City. The objective is to assess the compliance of technical specifications with applicable construction laws and standards in Indonesia. Data collection involves both primary and

secondary sources, including project documentation, direct field observations, and semi-structured interviews with key stakeholders such as contractors, consultants, and government officials. The documents analysed include technical specifications, work plans, and construction contracts, which are then compared with national regulations such as Law No. 2 of 2017, Government Regulation No. 16 of 2021, and relevant SNI standards.

The research instruments consist of interview guides, document checklists, and observation forms. Data were analysed using descriptive qualitative analysis, comparative document review, and thematic coding to identify gaps and patterns in legal and technical alignment. Validity and reliability were ensured through source triangulation and expert peer reviews. While the research focuses on a single project and is limited to legal aspects of technical documentation, it offers valuable insights for improving legal compliance and construction quality in urban building projects. The results are expected to inform practitioners and regulators about the importance of integrating legal frameworks into technical planning and execution.

4. RESULTS AND DISCUSSION

4.1 Legal Compliance of Technical Specifications

Based on the comparative analysis between the project's technical specifications and Indonesian construction regulations, several inconsistencies were identified. The document review found that certain components, such as material descriptions and workmanship standards, were not aligned with applicable SNI (Indonesian National Standard) references. For instance, the structural concrete specification referred to outdated testing methods that had already been revised under the latest SNI 2847:2019 standard. This indicates a lack of systematic update mechanisms in the preparation of project specifications, which poses legal and technical risks in terms of accountability and safety compliance.

In interviews with the project consultant and contractor, both parties acknowledged that they relied on template documents from previous projects without fully adjusting them to updated legal frameworks. This practice, although common in the industry, may lead to legal exposure if disputes arise during construction or post-occupancy phases. Government Regulation No. 16/2021 emphasizes that all construction activities must comply with national standards, and nonconformity may be subject to sanctions. Therefore, the failure to synchronize technical specifications with current laws and standards could be classified as a violation of the principle of due diligence in construction documentation.

4.2 Field Implementation versus Specification Documents

Field observations revealed several discrepancies between what was outlined in the technical documents and the actual implementation in the construction process. For example, the specification document called for a minimum slump test result of 12 ± 2 cm for ready-mix concrete, but field measurements consistently showed results above 15 cm. The site engineer admitted that concrete workability was adjusted on-site to ease pouring due to formwork limitations—however, such deviation was neither documented nor formally approved through a variation order. This highlights the weakness of project supervision in enforcing technical compliance, which is a critical legal responsibility under Indonesian Construction Law No. 2 of 2017.

Such deviations, although often minor in nature, could accumulate and result in reduced structural integrity or future performance issues. Moreover, these undocumented changes expose stakeholders to legal risks if defects occur. According to the results of the interview with a local official from the Public Works Department (Dinas PUPR), oversight of mid-scale private projects is often minimal due to limited personnel and resources. This situation underlines the importance of not only having technically sound specifications but also ensuring that legal compliance is monitored throughout project execution.

4.3 Dispute Potential and Regulatory Oversight

One of the most prominent risks identified in the project was the potential for disputes arising from ambiguous or incomplete specifications. The study found that causes related to quality control, testing methods, and contractor responsibilities were vaguely defined, leaving room for differing interpretations. From a legal perspective, this increases the likelihood of conflicts between parties, particularly in the event of construction defects or cost variations. Several previous studies have shown that poorly written technical specifications are among the top three causes of contractual disputes in building projects [1].

Additionally, the lack of alignment between contract documents and technical specifications further complicates legal accountability. For example, the contract referred to a performance bond requirement without detailing its conditions in the specification documents. In legal terms, this may weaken the enforceability of the contract and affect the owner's ability to claim damages in case of contractor default. Therefore, this case study illustrates the urgent need for integrated review processes that involve both legal experts and technical professionals before finalizing project documentation.

5. CONCLUSIONS

This study revealed significant issues in the legal and technical integration of construction specifications in a five-storey building project in Makassar City. The technical specification documents showed several inconsistencies with current Indonesian construction laws and standards, particularly in the use of outdated references and vague technical clauses. Interviews and field observations confirmed that these issues stemmed from habitual reliance on previous templates and a lack of formalized document updates. In practice, deviations from specifications were observed on-site without proper documentation or legal authorization, increasing both technical risks and legal vulnerabilities.

The findings demonstrate a weak alignment between technical documentation and regulatory compliance, which, if not addressed, could lead to contractual disputes and potential legal sanctions. Furthermore, the lack of systematic supervision from regulatory bodies, especially in medium-scale projects, exacerbates the risks associated with poor specification practices. This highlights the importance of incorporating legal rigor in the early stages of technical documentation development and ensuring continued enforcement during implementation.

Recommendation

Based on the research findings, several key recommendations are proposed:

1. Periodic Updating of Specification Templates: Project consultants should institutionalize a mechanism for routinely updating technical specification templates to reflect the latest SNI standards and regulatory changes, thereby reducing the risk of outdated or non-compliant documentation.
2. Integration of Legal Expertise: Construction projects—particularly during the documentation and planning stages—should involve legal professionals with expertise in construction law to ensure that contracts and specifications are aligned with regulatory frameworks.
3. Capacity Building for Stakeholders: Continuous professional development and training are needed for project stakeholders, especially contractors and site supervisors, to understand the legal implications of specification deviations and the importance of proper documentation.
4. Enhanced Government Oversight: Local authorities such as the Public Works Department (PUPR) should improve supervision by developing digital reporting systems or third-party auditing for medium-scale projects to ensure specification adherence and compliance.
5. Standardization of Dispute Prevention Clauses: Contracts and technical specifications should include clear and standardized clauses on quality control procedures, variation approvals, and dispute resolution mechanisms to reduce ambiguity and legal uncertainty.

By implementing these recommendations, the quality, safety, and legal security of building construction projects in Indonesia—especially in urban contexts like Makassar—can be significantly improved.

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