

The Civil Responsibility of CNC Machined Aftermarket of Motorcycle Rim Manufacturers Regarding Manufacturing Defects

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Abstract. This study examines the form of civil responsibility of CNC aftermarket rims manufacturers when their products are found to have manufacturing defects. This study focuses on the extent to which manufacturers are obliged to guarantee the safety of consumers regarding the products they produce. The method used in this study is a normative juridical approach, examining the legal provisions governing the relationship between manufacturers and consumers by reviewing how these rules are applied in the automotive industry. The findings of the study show that manufacturers must have both legal and ethical responsibilities to provide products that are safe and meet standards, and are obliged to compensate for losses arising from product defects. This paper is expected to serve as a reference for manufacturers and consumers in understanding the scope of each party's rights and obligations.

Keywords: Aftermarket; Consumer; Manufacturing; Protection.

1. Introduction

Advances in the automotive industry, particularly in the field of modification, have led to the creation of an increasingly diverse and innovative market. According to its definition, motor vehicle modification is a change to the technical specifications of the dimensions, engine, and/or power capacity of the motor (Government Regulation of the Republic of Indonesia No. 55 of 2012 concerning Vehicles). One of the most popular modification components is Custom-Built rims produced using Computer Numerical Control (CNC) technology. Computer Numerical Control (CNC) is a lathe machine controlled by a computer to simplify the machine's work process. The CNC machine structure works based on an integrated system between the computer, electronic components, and mechanical parts. Compared to conventional lathes and similar equipment, CNC machines have advantages in terms of accuracy, precision, flexibility, production time efficiency, and higher

production capacity (Sutopo et al., 2024). With a unique design, more attractive appearance, and relatively lighter weight compared to standard factory rims, this is one of the main factors that attract automotive enthusiasts. Rims play a very important role as components that bear the weight of the vehicle, withstand air pressure in the tires, and connect the tires to the suspension system. If the quality of the materials or the manufacturing process does not meet the applicable standards, structural damage such as cracks or breaks in the rims may occur, which could lead to serious accidents when the vehicle is traveling at high speeds or on rough terrain (MPM Honda, 2023). Although CNC rims are often claimed to have good durability and a production process that varies between manufacturers, the lack of official regulations governing aftermarket modification products raises concerns about product quality consistency and safety guarantees for consumers.

The first modification that motorcycle users often make is to replace the standard rims with aftermarket CNC rims, due to the aesthetic advantages they offer. However, behind these aesthetic advantages, there are potential dangers that must be considered, especially those related to driving safety. Some CNC machined aftermarket rims products still have product defects that cause them to break easily. Product defects occur when consumers purchase a product, but the product does not meet certain elements and requirements due to negligence on the part of the manufacturer during the manufacturing or shipping process, which can cause losses for consumers (Putri & Suharto, 2024).

Several video publications on social media such as TikTok and Instagram also reinforce the urgency of this issue. It is evident that many motorcycle users modify their vehicles by replacing standard factory rims with CNC rims. Instead of achieving better functionality and aesthetics, this practice actually endangers the users themselves. One example is a video uploaded to TikTok by the account fauzi.violla.2 on October 15, 2025, showing damage to a rims purchased from an aftermarket rims manufacturer in Indonesia during the return trip from a touring trip to Bromo.



Figure 1. Screenshot of video uploaded by @uzi.violla.2

Source: Tiktok @uzi.violla.2

From the image, cases of damage such as dents or broken CNC rims are indeed more common among users of 17-inch CNC rims, but it cannot be denied that many users of 14-inch CNC rims also experience this, especially if the rims are used for long-distance travel such as interprovincial trips, which can be more dangerous for the users themselves. Moreover, CNC rims are very fragile when hitting potholes, even when driving at low speeds. This can occur because some consumers choose to replace their rims without considering the load rating and offset that match the vehicle's specifications, causing the rims to exceed their capacity.

This issue is not only about product quality, but also reflects the weaknesses of our regulatory system. Currently, Indonesia has a regulatory vacuum in terms of aftermarket component supervision. In the world of motorcycle modification, the term aftermarket refers to various components, spare parts, and accessories made by manufacturers outside the original vehicle manufacturer (non-OEM) and used after the motorcycle is purchased, with the aim of replacing or improving the quality of factory components (Anam, K et al., 2024). Ministry of Transportation Regulation No. 133 of 2015 does regulate motor vehicles, but it does not specifically address safety standards for modified components such as rims. Compared to conditions in other more developed countries, in this case the European Union countries, there are regulations, namely through ECE Regulation No. 124, which requires all aftermarket rims to pass rigorous testing before they can be sold and strictly prohibits the use of rims that do not meet safety standards.

This phenomenon is increasingly important and deserves attention when linked to the legal aspects of consumer protection, namely Law Number 8 of 1999 concerning Consumer Protection. Article (4) (a) of Law Number 8 of 1999 emphasizes consumers' right to feel comfortable, safe, and secure when using goods and/or services (Law Number 8 of 1999). In the context of CNC rims, this means that consumers have the right to obtain products that do not endanger their safety when used. Meanwhile, Article (7) requires business actors to act in good faith, while also guaranteeing the quality of the products and services they produce and trade. If damage to CNC rims causes an accident, this condition can be considered a violation of consumer rights and has the potential to result in legal consequences for the manufacturer and distributor. In addition, Article 8 paragraph (1) letter (a) of the Consumer Protection Law prohibits business actors from producing or trading goods that do not comply with or meet established standards. Violation of this provision is punishable by sanctions as stipulated in Article 62 of the Consumer Protection Law. However, in practice, supervision and law enforcement regarding the distribution of aftermarket rims is still relatively weak, so that products that do not meet safety standards are still widely found on the market.

Therefore, special regulations are needed to protect consumers, for example, by providing compensation commensurate with the product purchased. Furthermore, the responsibility of CNC rims manufacturers is necessary, considering that the Consumer Protection Law itself already regulates this. However, in its development, CNC rims are considered by some users to be very prone to breaking or denting when used over a long period of time, so there needs to be new regulations when it has been proven that these rims do not have long-term durability and strength. This issue raises important legal questions, namely: what is the legal protection available to consumers who suffer formal or material losses due to damage to aftermarket motorcycle rims manufactured using cnc machines? and how the civil responsibility of manufacturers of aftermarket rims produced with cnc machines to consumers for losses caused by manufacturing defects based on the consumer protection law and civil law provisions in indonesia?

To answer these questions, in depth research needs to be conducted on the legal aspects of consumer protection for CNC-made aftermarket rims for motorcycle users. This will not only help consumers who may face similar problems, but also other aftermarket manufacturers to prevent these problems from occurring in the future and to comply with applicable consumer protection regulations. The results of this research are expected to provide clear guidance on the rights and obligations of consumers and manufacturers in similar situations, thereby increasing consumer confidence and protection in the purchase and use of aftermarket products.

2. Research Methods

The method used in this study is normative law, which means that it will use literature studies from data, positive law, and other legal materials. Normative legal research aims to explain and provide normative solutions to legal problems based on the study of legal texts and legal theory (Suyanto, 2023). The problem approaches used in this study include the juridical approach, the conceptual approach, and the case approach. The conceptual approach does not use a formal research design as is common in empirical studies that have a complete methodological structure (Kaharuddin, 2023). In addition, there are also secondary and tertiary legal materials to complement the primasry legal materials, using legal journals, legal textbooks, and internet articles related to legal protection for consumers and the legal liability of manufacturers for defects in aftermarket products.

3. Results and Discussion

3.1. Legal Protection Available to Consumers Who Suffer Formal or Material Losses Due to Damage to Aftermarket Motorcycle Rims Manufactured Using CNC Machines

Etymologically, legal protection consists of two words, namely protection and law. According to the Big Indonesian Dictionary, protection is defined as (1) a place of refuge; (2) the act (or deed, etc.) of protecting, while law is defined as regulations or customs that are officially considered binding, which are confirmed by the authorities or government. Therefore, legal protection can be defined as an action or effort to protect the community from acts or regulations that do not comply with the law, in order to achieve order and peace. Legal protection is a right for every citizen and an obligation for the state itself. Therefore, the state is obliged to provide legal protection to its citizens regardless of who they are and what their position is in society (Putra et al., 2023).

Several regulations related to motorcycle modification already exist in Indonesia, namely Law Number 22 of 2009 concerning Road Traffic and Transportation Article (52), which states that:

- (1) Motor vehicle modification as referred to in Article 50 paragraph (1) may include modifications to dimensions, engines, and load capacity.
- (2) Motor vehicle modifications as referred to in paragraph (1) shall not endanger traffic safety, disrupt traffic flow, or damage the pavement/load-bearing capacity of the road being traveled on.
- (3) Every motor vehicle that has been modified in such a way as to alter its construction and material requirements must undergo a re-type test (Law No. 22 of 2009 on Road Traffic and Transportation).

Article 52 paragraph (1) contains regulations regarding motor vehicle modifications, stating that motor vehicle modifications may include load-carrying capacity, in this case, for example, rims, because rims are useful for supporting loads and maintaining the stability of the motor vehicle, as they function as a mounting point and part of the rims that supports the load of the motor vehicle and the rider. If elaborated further in Article 52 paragraph (2), it is also explained that motor vehicle modifications must not endanger traffic safety. This has led to pros and cons between motorcycle users who modify their vehicles with rims and manufacturers who supply these aftermarket rims. Motorcycle users who modify their vehicles by replacing the rims believe that these rims have been certified by the Indonesian National Standard (SNI).

SNI is a standard established by the National Standardization Agency (BSN) that aims to meet criteria in terms of safety, quality, and efficiency for products in

Indonesia (Sari & Azmi, 2025). Indonesian National Standards (SNI) are the only standards that apply nationally in Indonesia. SNI is formulated by a Technical Committee and established by the Certification Agency to ensure that products that do not meet SNI standards are not allowed to be distributed in the market (Prayuti, Y., & Husen, D. 2018). However, in reality, there are still several businesses or manufacturers of CNC-made aftermarket rims who are unwilling to take responsibility for defects in products that have been marketed for sale, even though these products have SNI certification. Based on the provisions regarding protection, it is also explicitly stated in Article 4 letter (a) and (h) of Law No. 8 of 1999 on Consumer Protection, which gives consumers the right to feel safe, comfortable, and protected when using goods, as well as the right to receive compensation, damages, or replacement if the goods received do not comply with the agreement or do not function properly. If the product is proven to be defective, consumers have the right to hold the manufacturer liable for formal losses such as time, energy, and transportation costs wasted due to the use of the problematic product, as well as material losses in the form of repair costs, replacement of affected components, and losses due to accidents caused.

One of the institutions that regulates legal protection for consumers in Indonesia is the Consumer Dispute Settlement Agency (BPSK). The dispute settlement referred to is an effort to resolve any dispute between consumers and product providers (goods or services) regarding consumer products in a legal relationship (Hartanto, 2022). BPSK plays an important role as an institution that carries out repressive legal protection functions. This institution was established based on Article 49 paragraph (1) of Law Number 8 of 1999 concerning Consumer Protection to resolve consumer disputes through non-litigation channels. The existence of BPSK facilitates dispute resolution in an easier, faster, and more cost-effective manner compared to the judicial process in general courts. BPSK is often referred to as a "small claims court" because of its simple settlement procedures and relatively fast case handling time limit, namely that a decision must be issued within 21 working days. The concept of the BPSK as a small claims court is intended to make it easier for consumers who have suffered losses to seek compensation without having to deal with expensive legal costs, rigid procedural rules, or lengthy court proceedings. For this reason, the BPSK is seen as an important means of realizing more equitable access to justice in Indonesia's consumer protection system.

Law enforcement related to defective products, both in Indonesia and in other countries, still faces various complex obstacles, from legal and technical to social aspects. One of the biggest problems is the process of proving liability. In many situations, consumers who are harmed by defective products must demonstrate that the harm they suffered was actually caused by the defect in the product they used. Proving this is not an easy task, as it requires highly complex evidence. Another equally important aspect is the power imbalance between consumers and

large-scale producers. Large companies generally have strong financial resources and the support of expert and experienced legal teams. In contrast, consumers as individuals often lack legal knowledge, have limited funds, and inadequate access to legal assistance. This situation puts consumers in a much weaker position when trying to assert their rights (Alayya et al., 2025).

3.2. The Civil Responsibility of Manufacturers of Aftermarket Rims Produced with CNC Machines to Consumers for Losses Caused by Manufacturing Defects Based on the Consumer Protection Law and Civil Law Provisions in Indonesia

The responsibility of aftermarket rims manufacturers is based on the principle of strict liability as stipulated in Article 19 paragraph (1) of the UUPK. Strict liability is a concept applied in product liability cases, whereby sellers are responsible for any and all products that are defective or pose a serious threat to consumer safety (Gunawan, 2018). This principle of strict liability is very beneficial to consumers because it does not require proof of fault (schuld) on the part of the manufacturer, but only proof of a causal relationship between the product defect and the loss suffered. In consumer protection law, strict liability is used for product liability, in addition to product recall obligations and liability for compensation. The following are some explanations regarding the forms of civil responsibility by manufacturers of CNC-made aftermarket rims that have manufacturing defects:

1. Liability Based on Product Liability

Product liability is a form of civil responsibility imposed on businesses for losses suffered by consumers as a result of using the goods they produce. This liability is rooted in the concept of tort liability. In the doctrine of tort liability, there are several important elements, namely the existence of an unlawful act, the element of fault on the part of the perpetrator, the existence of damages, and the causal link between the unlawful act and the damages suffered (Kuntag, R. F. 2021).

Article 19 paragraph (1) of the Consumer Protection Law states: "Business actors are responsible for providing compensation for damage, contamination, and/or consumer losses resulting from the consumption of goods and/or services produced or traded." Although Article 19 paragraph (1) of the Consumer Protection Law does not explicitly state "defects", but rather uses the term "damage". The term "damage" is subject to legal interpretation based on argumentum analogi, which can be equated with the meaning of hidden defects that are part of defective products (Ariyanto et al., 2021).

By using the argumentum per analogiam method of legal interpretation, the meaning of the term "damage" can be expanded to also include hidden defects as an integral part of the category of defective products. Therefore, rims

manufacturers must still fulfill their legal responsibilities if the products they produce do not meet safety standards and cause harm to consumers.

2. Product Recall Obligations

The obligation to recall products is regulated in Article 19 paragraph (2) of Law Number 8 of 1999 concerning Consumer Protection (UUPK), which stipulates that compensation can be in the form of a refund or replacement of goods with the same type or equivalent value. Furthermore, Article 7 letter (e) of the Consumer Protection Law emphasizes the obligation of business actors to provide guarantees for the goods they produce and trade, so that consumers are protected in terms of product quality and safety. Therefore, based on these regulations, aftermarket rims manufacturers are obliged to guarantee that every rims marketed meets safety and roadworthiness standards. If a manufacturing defect is identified that could potentially threaten user safety, such as material quality that does not meet technical specifications or a CNC machining process that weakens the rims structure, the manufacturer must take steps to recall all such products from circulation as a form of responsibility.

Product recall are an important measure taken by companies to remove any defective or potentially hazardous items from circulation. This effort is not only aimed at preventing negative impacts on users, but also at maintaining the company's image and customer trust. Consumers who see that a company is responsible for the quality of its products will usually feel more secure and valued (Safitri & Noorlena, 2025).

Here is a simple mechanism of the product recall process:

Table 1. Mechanism of the product recall process

| Stages | Main Activities | Explanation |
|---|-----------------------------|--|
| 1. Identification of Defective Products | Detect product issues | Manufacturers track and identify defective products through internal quality control mechanisms or through information and complaints submitted by consumers. |
| 2. Product Recall Announcement | Communication to the public | Manufacturers must convey information about product recalls through various public media, such as television, radio, and newspapers, as well as through other effective communication channels, such as official websites, social media, or email, so that all consumers who have purchased the product are aware of it. |

| | | |
|------------------------------------|------------------------|---|
| 3. Provision of a Refund Mechanism | Product return process | Manufacturers must prepare return procedures that are easily accessible to consumers and may not charge any fees, including shipping and handling or administrative fees. |
|------------------------------------|------------------------|---|

If manufacturers fail to fulfill their product recall obligations, they may be subject to administrative sanctions in the form of fines or revocation of business licenses in accordance with applicable regulations. In addition, manufacturers may also be subject to civil lawsuits to provide compensation for losses incurred by consumers as a result of such negligence.

3. Liability for Compensation

Aftermarket products used for motorcycle modifications must still be compensated by the manufacturer if they are proven to be defective and cause losses to consumers. The law does not distinguish between OEM (Original Equipment Manufacturer) and aftermarket goods as long as the goods are manufactured and marketed to consumers, manufacturers are still bound by consumer protection provisions and general civil law (Setiawan, J., & Afrita, I. 2025). In the Consumer Protection Law, the obligation of business actors to provide compensation is clearly stated in Article 19 paragraph (1), which states that business actors are responsible for compensating for damage, contamination, or losses experienced by consumers due to the use or utilization of goods that are produced or traded. This provision confirms that if a causal relationship between defects in CNC rims and consumer losses is proven, the manufacturer is the party responsible for bearing the legal consequences in the form of compensation and cannot transfer this responsibility to consumers (Kuntag, R. F., 2021).

From the perspective of the Civil Code, the manufacturer's obligation to provide compensation can be reviewed through two legal bases, namely default and unlawful acts. In the context of breach of contract, defects in CNC rims are understood as a failure to fulfill the obligation to deliver goods that are in accordance with the quality, nature, and intended use that has been promised, either explicitly or implicitly, thereby giving rise to an obligation to pay compensation as stipulated in Article 1243 of the Civil Code. Meanwhile, in the context of unlawful acts, manufacturing defects that cause consumer losses can be viewed as a violation of the general duty of care in producing and distributing safe goods, so that manufacturers can be held liable for compensation under Article 1365 of the Civil Code (Mahayani et al., 2022).

4. Conclusion

The form of producer liability to consumers for losses resulting from manufacturing defects is comprehensively regulated in the Consumer Protection Law and Indonesian civil law provisions. Based on Article 19 of the UUPK, producers are liable to compensate consumers for losses suffered as a result of product defects, by applying the principle of reverse burden of proof as stipulated in Article 28 of the UUPK. The provisions of the Civil Code, particularly Articles 1243 and 1365, provide additional grounds for liability for breach of contract and unlawful acts. Such liability may take the form of material and immaterial compensation, product recall, and administrative or criminal sanctions. This dispute resolution mechanism can be pursued through the Consumer Dispute Settlement Agency (BPSK) or the general court. However, the implementation of this liability still faces various obstacles, including limited specific regulations, difficulties in technical evidence, and low consumer legal awareness. According to researchers, there is a need to strengthen sectoral regulations on aftermarket product standards, particularly for rims, as this is important because it is directly related to rider safety, increasing consumer access to product testing facilities, and intensifying consumer legal education to realize effective consumer protection in Indonesia. Although the UUPK and the Civil Code have provided a basic framework for manufacturer liability, there are still no specific regulations governing safety standards and certification procedures for aftermarket rims. Unlike other vehicle components that are regulated by Indonesian National Standards (SNI), aftermarket rims are often produced without strict supervision from the competent authorities, and the absence of clear standards makes it difficult for consumers to prove that a product does not meet the required safety standards. Furthermore, based on this research, the government should make it easier for consumers to report incidents related to products with manufacturing defects and violations of their rights by business actors, and not judge whether a product is expensive or cheap in order to accept a report, even if consumers do not want compensation from the business actor. This should be done through a consumer reporting mechanism that is easily accessible with a design and form that is as user-friendly as possible, such as the ease with which consumers access marketplace applications when purchasing products online or the ease with which consumers use WhatsApp services. In the event of a consumer report, businesses are also given the right to respond to the report to ensure balance and fairness for both parties, even though this reporting mechanism is confidential so that it will not tarnish the reputation of the business if the report cannot be proven to be true.

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