

ENGINEERING INSURANCE

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Abstract

Engineering insurance is one of the most general and effective methods of project risk management in Western countries with a perfect insurance system. It covers damage to plant, machinery, and other engineering equipment such as boilers, computers, cranes, and lifts. Professional liability insurance, a type of engineering insurance, covers errors and omissions in the services provided by businesses. General liability insurance helps cover bodily injury claims, property damage, and reputational harm, among other risks. Engineering project insurance strategy simulation models can be used to analyze and optimize insurance strategies for projects. Cash flow modeling is an important aspect of insurance business, and efficient methodologies have been proposed to address this.

Keywords: engineering, insurance

INTRODUCTION

Engineering insurance is a comprehensive insurance policy that provides economic safeguard against risks faced by ongoing construction projects, installation projects, and machines and equipment in project operation. It is a crucial aspect of risk management for engineers and their firms, as their work involves creating, designing, and constructing, which can lead to increased chances of accidents and perils. There are various types of engineering insurance policies that cater to different forms of uncertainties associated with on-site construction and the usage of plant and machinery. Some key categories and features of engineering insurance include: (1) Construction Project All Risks Insurance**: This coverage provides protection for the ongoing construction project, offering compensation for material loss caused by accidents or natural disasters, except for exclusions. (2) Installation Project All Risks Insurance**: Similar to construction project all risks insurance, this coverage focuses on the installation phase of projects, providing protection for material loss during the installation process. (3). Machinery Breakdown Insurance**: This coverage specifically addresses the risks associated with machinery and equipment, offering compensation for losses resulting from breakdowns or malfunctions. (4). Contractor's All Risk (CAR) Insurance**: CAR insurance offers comprehensive coverage for civil engineering projects, including protection against accidental physical loss or damage to contract works, public liability, own plant, contract works, hired-in plant, and employee's tools. (5) Erection All Risk (EAR) Insurance**: EAR insurance covers loss or damage to projects involving the erection or installation of plant, machinery, and equipment. It protects the contract works, construction plant and equipment, damage to third-party property, and bodily injury to third parties. (6) Loss of Profit due to Machinery Breakdown Insurance**: This coverage addresses the financial loss suffered as a

result of the production process being halted due to machinery or plant breakdown. Engineering insurance is vital in helping businesses manage and mitigate the risks associated with their projects, ensuring financial security and peace of mind for engineers and their clients.

METHODOLOGY

The methodology of engineering insurance involves the following aspects:

1. **Product Categories:** Engineering insurance can be divided into construction project all risks insurance, installation project all risks insurance, project all risks insurance, and machinery breakdown insurance, depending on the project and the attribute of the object.
2. **Insurance Period:** The insurance period is the same as the construction period of the project.
3. **Functions:** Engineering insurance provides loss compensation for material loss caused by any accidents or natural disasters, except for exclusions. It also provides third-party liability coverage for personal injury or property damage to third parties in construction sites and adjacent areas caused by the accident that directly relates to the insured project.
4. **Simulation Models:** Engineering project insurance strategy simulation models can be used to analyze and optimize insurance strategies for projects.
5. **Calculation Method:** The calculation method of the engineering insurance rate is based on engineering cost. The modification method and the maximum possible loss method are used to calculate the engineering insurance rate.
6. **Types of Engineering Insurance:** Types of engineering insurance include contractor's all risk insurance, erection all risk insurance, loss of profit due to machinery breakdown insurance, and cyber liability insurance, among others.
7. **Underwriting Process:** The underwriting process of engineering insurance often requires specialists such as engineers to identify and analyze particular risks.

In conclusion, the methodology of engineering insurance involves various aspects, including product categories, insurance periods, functions, simulation models, calculation methods, types of engineering insurance, and the underwriting process. By understanding these aspects, engineers can make informed decisions about the coverage they need to protect their business.

RESULT AND DISCUSSION

As the search results are not relevant to the topic of engineering insurance, here is a discussion on the results and discussion of engineering insurance: (1) Engineering insurance is a crucial aspect of risk management for engineers and their firms. It provides financial protection against various risks, such as client claims, work-related injuries, and property damage. Here are some key points to consider about engineering insurance: (2) Professional Liability Insurance**: Also known as errors and omissions (E&O) insurance, professional liability insurance is one of the most important coverages for engineers[2]. It protects against claims of negligence or failure to meet expectations in the services provided[1]. For example,

if a client claims that the work completed by an engineering contractor was unsatisfactory, E&O insurance would help cover the cost of defending the business[2]. (3) General Liability Insurance**: This coverage helps protect your business from claims that it caused bodily injury or property damage to someone else[1]. It is a recommended coverage for engineers, as it provides additional protection for common risks faced by businesses[5]. (4) Commercial Property Insurance**: This coverage helps protect the owned or rented building, tools, equipment, and inventory used to operate your engineering business[1]. It is essential for safeguarding your assets in the event of a covered property loss[3]. (5) Business Income Insurance**: This coverage helps replace lost income if you can't operate your engineering business due to a covered property loss[3]. It is a valuable coverage for ensuring the financial stability of your business during unexpected disruptions. (6) Workers' Compensation Insurance**: Required in almost every state for engineering firms with employees, workers' compensation insurance provides coverage for work-related injuries and protects sole proprietors from work injury costs that health insurance might deny[5]. (7) Cyber Liability Insurance**: This policy helps engineers recover from data breaches and cyberattacks, providing coverage for the costs associated with managing and mitigating the impact of a cyber incident[5]. (8) Commercial Auto Insurance**: If you use business-owned vehicles for work, you may need commercial auto insurance to help cover the cost of property damage and injuries in an accident involving your business vehicle[3]. (9) Factors Affecting Insurance Costs**: The cost of engineering insurance can vary based on factors such as coverage limits, deductible amount, years in business, and claims history[1]. To determine your specific cost, it is best to get a professional liability insurance quote from an experienced insurance carrier[1].

In conclusion, engineering insurance is an essential aspect of risk management for engineers and their firms. It provides financial protection against various risks, such as client claims, work-related injuries, and property damage. By understanding the different types of engineering insurance policies available and the factors that affect insurance costs, engineers can make informed decisions about the coverage they need to protect their business.

CONCLUSION

In conclusion, engineering insurance is an essential aspect of risk management for engineers and their firms. It provides financial protection against various risks, such as client claims, work-related injuries, and property damage. Engineering insurance can protect businesses from potentially disastrous equipment damage and other risks, including project delays. By opting for this type of policy, businesses can ensure peace of mind, operational continuity, and improved cash flow. Additionally, engineering insurance enhances a business's credibility and professionalism for clients and stakeholders, demonstrating a commitment to risk management. Opting for engineering insurance can help businesses survive potential losses, enabling them to continue operating and remain competitive in the long term.

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