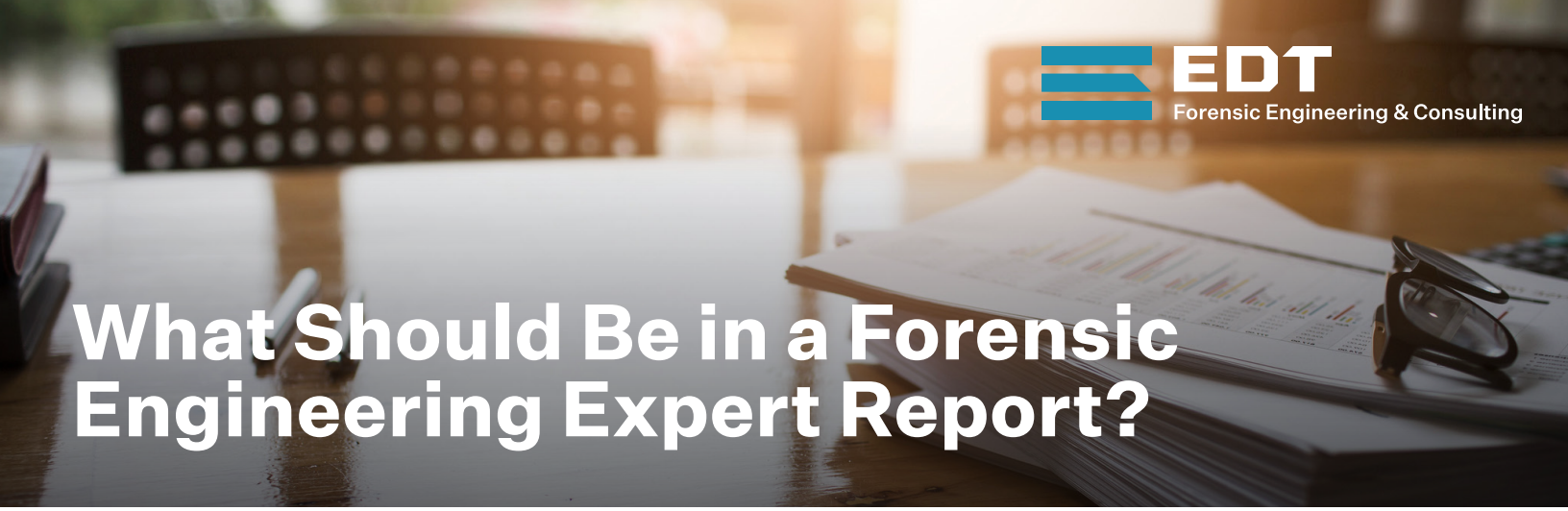

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What Should Be in a Forensic Engineering Expert Report?

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Loss handling professionals often engage forensic engineers to assist in finding answers to technical questions. This work may involve conducting on-site examinations, laboratory examinations, material testing, or numerous other investigative options. Once the engineer has arrived at a conclusion or opinion, this information must be conveyed to the client, whether or not the claim is litigated. Furthermore, should the matter proceed to litigation, the engineering expert's report will become a necessary component in explaining the engineering expert's conclusions and opinions. A well-written report that is understandable is needed.

When evaluating a forensic engineering expert report, look for the following:

ANSWERS TO QUESTIONS.

It is of the utmost importance that the engineer understands what questions the client needs answered. The client may need to know the circumstances resulting in a loss, the cause of the loss, the scope of damage related to the loss, estimated repair costs, or replacement versus repair options. The report must work towards answering these questions. A report that leaves the client seeking answers to the original questions fails to complete the task of aiding the client in making decisions and seeking solutions.

DOCUMENTATION OF THE WORK OF THE ENGINEER.

The engineering expert's report should describe the work the engineer has performed to lay the foundation for the opinions provided in the report. This includes information on the engineer's activities during the investigation. Was there a joint lab examination? Was there an on-site investigation? Were the services of a third party required to aid the engineer's investigation? What research was done? For each activity, the report should present what relevant information the investigation yielded. This may also include images made during an examination, a metallurgical analysis report, fire investigation reports, recall information, etc. These details provide support for the ultimate conclusions.

CLARITY OF INFORMATION WITH MINIMAL JARGON.

The role of the engineering expert is more than determining what has happened and, sometimes, why it happened.
The engineering expert's role also includes conveying opinions and findings in a manner that is understandable for a non-engineering expert. The use of technical jargon and acronyms without clear explanation may confuse the client or other interested parties and affect their ability to understand and be convinced of the engineer's opinions. However, the report must also discuss the reliable scientific methods and principles utilized by the engineer to reach their opinion. It may take effort for engineers to speak in a plain manner; however, a report that can convey complex scientific methods and principles in a clear and concise manner can be a powerful aid and is worth the effort.

A SOUND FOUNDATION.

When answering questions, the engineer's report should be founded in solid, well-established principles and practices that are accepted by the relevant industry and organizations. For example, when conducting a fire investigation, the fire investigation expert will often utilize NFPA 921, "Guide to Fire & Explosion Investigations," as this is an industry accepted guide that will ensure the investigator performs his or her investigation in a thorough and effective manner. While NFPA 921 focuses on fire investigations, the guide also provides good overall practices and behaviors when conducting an engineering investigation. In addition, should a matter proceed to litigation, the Federal Rules of Civil Procedure, Rule 26(2)(B)(i) states that expert witness reports must contain, "a complete statement of all opinions the witness will express and the basis and reasons for them." [1]

OBJECTIVITY.

The most crucial aspect of the engineer's report is that it must be objective. Engineers are not advocates for the client; engineers are advocates for the truth. Along with conducting an impartial and ethical investigation, the engineer's report must also be objective and serve to portray the facts of the case, regardless of the client's desired outcome. The report must contain factual information and an objective basis for the engineer's opinion. The report should not seek to give the client the answer the engineer thinks the client may want. Instead, the report should contain the engineer's opinion based on facts surrounding the case. In addition, engineering expert reports are often issued to provide a rebuttal to another engineering expert's report should there be a disagreement of opinions. An engineer is not to disparage, belittle, or defame the other expert. The Code of Ethics for the National Society of Professional Engineers (NSPE) states, "Engineers shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other engineers." Any rebuttal of opinions should, once again, be based on facts, objectivity, and sound scientific principles.

While the above items are not a complete list of what to expect in a forensic engineering expert report, they are items that are critical to a well-written report that will aid the client in making the appropriate decisions. A report with opinions supported by objective, factual information with a solid foundation is the culmination of an effective engineering investigation.

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[1] The reader is referred to Rule 26 of the Federal Rules of Civil Procedure, which contains numerous additional requirements for expert reports and testimony.