

**FOUNDATION PERFORMANCE  
ASSOCIATION**

# FPA-SC-18

**STANDARD OF CARE FOR ENGINEERS AND  
OTHER PROFESSIONALS WORKING IN TEXAS**

**Presented on July 9, 2014**

FPA-SC-18 is a paper produced by a sub-committee of the Structural Committee of the Foundation Performance Association.

- The Structural Committee is chaired by Ron Kelm and presently has 54 members.
- The sub-committee was chaired by William E. Morfey and had 10 authoring members.

# FPA Involvement

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FPA-SC-18 was sanctioned by the Structural Committee in February 2010.

- The paper passed FPA peer review and was published in May 2014.

## Paper History

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- William E. Morfey (Chair)
- Adam Bakir
- Francisco Carrillo
- Raghu Dass
- David Karimi
- Ron Kelm
- Andrew Martin
- Lucas Mauro
- Michael Skoller
- Robert Taylor

## Sub-Committee Members

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The intended audiences for the paper are engineers, architects, surveyors, inspectors, builders, building owners, repair contractors, attorneys, and others that may be involved in the design, construction, inspection, forensic evaluation, and litigation related to structures and other facilities located in the state of Texas.

# Audience

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- When something goes wrong on a job, professionals can get sued.
- **Identifying and understanding the applicable standard of care in a particular situation is thus critical, because that is the yardstick against which a tribunal will measure the professional's conduct to see if it was deficient or not.**

# Premise

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Provide the professional with a reliable methodology to identify the relevant standard of care in a given situation.

# Goal

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## No “Litmus Test”

- The procedure outlined in the paper will not yield a black or white answer in every instance.
- This can be particularly true where issues are centered on emerging knowledge and/or technology.

## Caveat

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- **1.0 INTRODUCTION**
- **2.0 HISTORICAL DEVELOPMENT OF THE ELEMENTS OF NEGLIGENCE**
- **3.0 THE PRESENCE OF DAMAGE DOES NOT AUTOMATICALLY INDICATE NEGLIGENCE**
- **4.0 DEFINITION OF STANDARD OF CARE**
- **5.0 PROCEDURE FOR DETERMINING STANDARD OF CARE**
- **6.0 EXAMPLES**
- **7.0 SURVEY LEVELS**

# Paper Structure

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The applicable standard of care can come from one or more places:

- 1) The contract with the client (i.e., the parties define it);
- 2) Legislative standards (codes, ordinances, statutes);
- 3) Executive decree (TBPE, State Bar, TREC, etc.), and;
- 4) Standards developed by courts.

The first three are easily discovered; just read the appropriate document. **The committee focused its attention on the fourth “catch all” category.**



## What is “Common Law?”

- It is the collection of judge-made legal rules that develop over time.
- At its core is the notion that cases with similar facts should be treated consistently. Thus, courts are bound to follow “precedent.”
- However, revisions to common law can occur when societal circumstances require.

Texas is a “common law” state. Thus, if a professional working in Texas is not provided a standard of care through one of the other sources, the common law will provide it.



## Section 1 - Introduction

- Sources of Standard of Care

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- The concept of a “Standard of Care” is based on what the fictitious “Reasonable Man” (Reasonable Person) would or would not do.
- The Reasonable Man made his first official appearance in England in 1837, in the case of *Vaughn v. Menlove*.

Section 2 - Historical Development of the Elements of Negligence

## 2.1 The “Reasonable Man”

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- The Reasonable Man is a legal fiction; it is a concept manufactured in court decisions.



## Section 2 - Historical Development of the Elements of Negligence

### 2.1 The "Reasonable Man"

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## Many Names, But All the Same “Person”

- Reasonable Man
- Man of Ordinary Sensibilities
- Reasonably Prudent Person
- Ordinarily Prudent Person
- Person of Ordinary Prudence

Section 2 - Historical Development of the Elements of Negligence

### 2.1 The “Reasonable Man”

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## Vaughn v. Menlove



Section 2 - Historical Development of the Elements of Negligence  
2.1 The "Reasonable Man"

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## Vaughn v. Menlove

- Farmer stacked his hay on the edge of his property, near his neighbor's cottages.
- He was repeatedly warned over a course of weeks that the hay could catch fire, but responded that he would "chance it."
- The hay did catch fire and burned down the neighboring cottages.
- Lawsuit!

Section 2 - Historical Development of the Elements of Negligence

### 2.1 The "Reasonable Man"

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## Vaughn v. Menlove

- The trial court told the jury to consider whether the fire had been caused by the farmer's negligence, stating that the defendant was "*bound to proceed with such reasonable caution as a prudent man would have exercised under such circumstances.*"
- The defendant argued that instead, the jury should have considered whether he had acted honestly in accordance with his best judgment.
- Plaintiff won; defendant appealed.

Section 2 - Historical Development of the Elements of Negligence

### 2.1 The "Reasonable Man"

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## Vaughn v. Menlove

- The appellate court upheld the verdict, noting that a “best judgment” standard would create too much uncertainty since the “judgments of individuals are as variable as the lengths of their feet.”
- The trial court’s decision to apply an objective standard of care was upheld.

Section 2 - Historical Development of the Elements of Negligence

### 2.1 The “Reasonable Man”

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## Legal Requirements for Negligence

- Existence of a legally recognized duty
- Breach of that duty
- Legally recognized damage
- Caused by the breach of duty

Section 2 - Historical Development of the Elements of Negligence

### 2.2 The Elements of Negligence

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## Negligence in the context of a professional

- Professional Negligence or “malpractice” is really just a specialized type of negligence.
- The additional duty imposed upon a professional stems from the professional’s superior knowledge, training, and skill in their area of expertise.

Section 2 - Historical Development of the Elements of Negligence

### 2.2 The Elements of Negligence

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## Negligence in the context of a professional

- Significantly, the objective standard of care shifts from a “reasonable person” perspective to a “reasonable [insert name of profession].”
- This shift is appropriate, since you would not want to judge a professional’s actions by a lay person’s standards.



## WARNING

- Just because a structure exhibits damage, it does not automatically mean that professional negligence has occurred.
- Remember, we are assessing this issue from the perspective of a reasonably prudent professional, not a perfect one.

Section 3 – Damage Does Not Automatically Mean Negligence

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## Perfection is Not the Standard

Sometimes bad things happen despite the fact that all of the parties involved exercised reasonable care in performing their tasks. Humans are not perfect and the law does not require perfection.

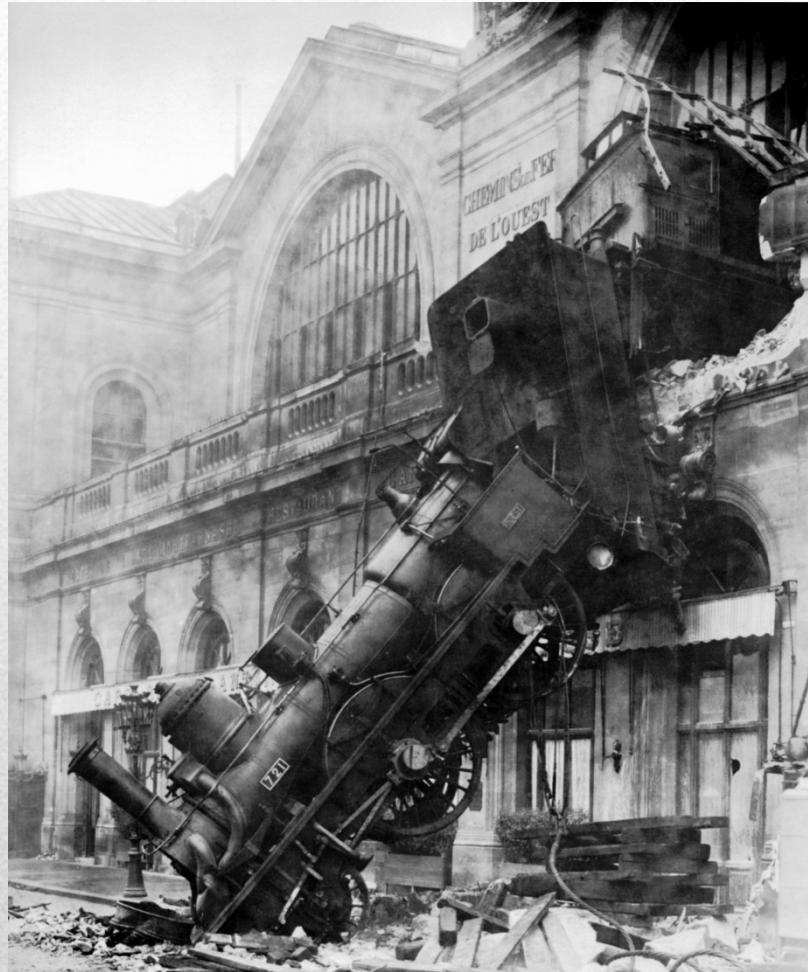
But, the law DOES set a “floor” for human actions

Section 3 – Damage Does Not Automatically Mean  
Negligence

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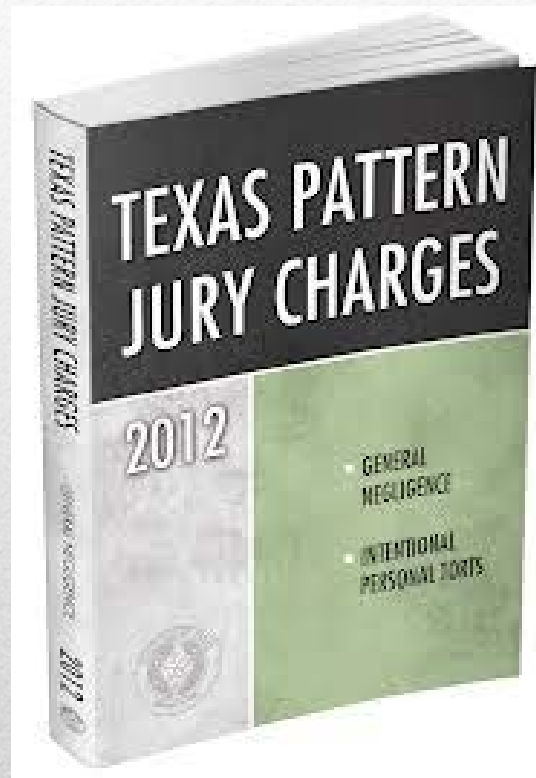
## Resist the Urge to Jump to Conclusions



Section 3 – Damage Does Not Automatically Mean Negligence

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## Texas Pattern Jury Charge 60.1; Nonmedical Professional's Degree of Care





## Texas Pattern Jury Charge 60.1; Nonmedical Professional's Degree of Care

**“Negligence,”** when used with respect to the conduct of [professionals and other contractors working in Texas], **means failure to use ordinary care, that is, failing to do that which [professionals and other contractors working in Texas] of ordinary prudence would have done under the same or similar circumstances** or doing that which [professionals and other contractors working in Texas] of ordinary prudence would not have done under the same or similar circumstances.

“Same or similar circumstances” may include, but is not limited to:

- Locale
- Timeframe
- Weather conditions
- Contractual relationships
- Code/ordinances/regulations
- Soil conditions
- Floodways/flooding
- Design requirements
- Relevant experience
- Environmental concerns
- Site/project evaluation
- Groundwater table.



## Texas Pattern Jury Charge 60.1; Nonmedical Professional's Degree of Care

*“Ordinary care,” when used with respect to the conduct of [professionals and other contractors working in Texas], means that degree of care that [professionals and other contractors working in Texas] of ordinary prudence would use under the same or similar circumstances.*

- American Heritage College Dictionary (3rd. Ed.) defines the word “ordinary” as – (1) Commonly encountered; usual; (2) of no exceptional ability, degree or quality; average . . .
- Webster’s Dictionary defines the word “prudence” as – “Skill and good judgment in the use of resources.”

## Putting It All Together

*“Negligence” means failure to use the degree of care that [professionals] of ordinary prudence would use under the same or similar circumstances.*



## **Texas Pattern Jury Charge 60.1; Nonmedical Professional's Degree of Care**

Note that the term “standard of care” does not actually appear within the standard jury charge. The term “standard of care” is merely a shorthand way of referring to “that degree of care that [a professional] of ordinary prudence would use.”

## ASFE Definition

*“Standard of care is commonly defined as that level of skill and competence ordinarily and contemporaneously demonstrated by professionals of the same discipline practicing in the same locale and faced with the same or similar facts and circumstances.”*

- The committee found no substantive difference between this and the Texas Pattern Jury Charge



## **Section 5 – Procedure For Determining Standard of Care**

- The goal in assessing the standard of care is to determine “what professionals and other contractors of ordinary prudence would have done under the same or similar circumstances.”
- For a particular set of circumstances, the easiest way to determine what other professionals have done or would do is to ask them.
- The best way to ask a group about their opinions or experiences is to conduct a survey.



Surveys are effective at obtaining the opinions of a geographically diverse group of professionals in a short period of time. There are a number of ways to conduct surveys, each with strengths and weaknesses:

## *Personal interviews (also called in-depth interviews or IDI's)*

- Good way to get in-depth information.
- One or more people interviewing one respondent.
- Expensive because of the one-on-one nature of the process, but allow follow-up questions to clarify answers to survey questions.
- This method would be useful for a professional to use as part of a due diligence survey of peers prior to starting a project or for a project that involved the use of construction methods or materials with which the professional has not had a lot of experience.



### *Telephone interviews*

- The fastest method of gathering information.
- Interviewer follows a prepared interview.
- Most telephone interviewing now is performed through computer assisted telephone interviewing or CATI in which the questionnaire is programmed on a computer. As the interviewer reads the questions, the respondent's answers are entered directly into the computer for analysis.

### *E-Mail and Regular Mail Surveys*

- Cost effective but slowest survey methods.
- No interviewer = no interviewer bias.
- The primary negatives are:
  - No follow up questions;
  - Respondent can read ahead (may bias answer in current question);
  - Cannot be sure who completed the survey;
  - Respondent can skip questions.



### *Online Surveys*

- Most cost effective
- Fastest
- Can be interactive
- Can show complex drawings, pictures or film.

Good survey research depends on careful adherence to established scientific and procedural guidelines.

All surveys will produce data. Whether the data is meaningful or not depends on careful design, execution, and analysis.

- For this reason, the use of a third party to design the survey and execute the data collection and analysis is recommended.



The steps in conducting a survey:

- Determine design methodology (e.g., online survey)
- Determine feasibility (e.g., timing, budget, sample availability)
- Develop survey instruments (e.g., create a questionnaire)
- Select sample (e.g., association databases, local associations)
- Conduct pre-test
- Revise questionnaire or collateral materials as needed
- Collect data
- Analyze data
- Create report or summary

Despite costs of equipment and software needed to conduct online surveys, such research is the most cost effective way to collect information.

If you hire a research professional, some cost factors will be:

- Questionnaire design
- Sample preparation
- Preparation of email invitation
- Preparation of ancillary educational materials
- Programming questionnaire
- Hosting online questionnaire
- Follow-up with non-responders
- Incentives
- Analysis
- Report preparation
- Testifying in court, if required



Defining the goals of the research is the best way to ensure good questionnaire design.

Elements of good questionnaire design include:

- Commit the goals of your survey to writing
- Ask only questions that directly address the goals of the survey
- Avoid asking questions just because they would reveal information that would be “interesting to know.”

Even where only a very small sample will be surveyed, the questionnaire must follow accepted guidelines to be considered a valid measure of opinion.



You must invite professionals to participate in the survey. The best way is to send an email to a sample of professionals.

The email should:

- Be personalized
- Introduce whoever is conducting the survey
- Tell the respondent that a brief survey is being conducted
- Mention the incentive (if one is offered)
- Ask the respondent to participate
- Provide a link to the survey website and a password (Passwords are one-time-use passwords, so the respondent cannot share the link with others).

The invitation is important because it has to give enough information about what the survey is about to persuade the respondent to participate, but not so much information that the respondent is biased in any way.



*(Pre-Project Example)*

*Hello, I am Bob Smith, a structural engineer in Dallas, Texas. I have been asked to provide design consultation for a lightly loaded residential foundation project in Houston, Texas. Because I am not as familiar with soil conditions in the Houston area, I thought I would solicit some opinions from engineers more familiar with the Houston area.*

*I am proposing to design....[provide details].*

*I would very much appreciate some input from you about the use of this method in the Houston area.*

*If you would like to participate, I am offering an honorarium as a way of saying thank you for your input.*

*If you would like to participate, please follow the instructions below. Your answers will be completely confidential. You may leave your name off the survey at the end if you would like, or if you don't mind if I call to discuss the project, include your name and phone number or e-mail address.*

*Thanks,  
Bob Smith, PE*

## Section 5.2.1 – The Invitation

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*(Post-Project Example)*

*I am Bob Smith, a consultant to engineering firms. A question has arisen about some of the methods utilized in a recent project in the Houston area.*

*I am conducting a brief survey of professionals who work in the Houston area to determine how they would approach some of the issues in this project.*

*This survey concerns foundation design for a multi-story office building in Houston, Texas.*

*The survey should take only about 10 minutes of your time and I am offering an honorarium for your time and input.*

*If you would like to participate, just follow the instructions below. Your answers to the survey will be held in strict confidence.*

*Respondents may remain completely anonymous if they like, or, if they would like to be available to answer other questions by phone or email, then they can provide that information.*

*Thanks,  
Bob Smith, PE*



Remember:

- The invitation is a chance to tell the respondent what is being done and why, and to ask the respondent to participate. It is not the place to tell respondents all about the project; that comes later.
- It is important to be candid and truthful in the invitation and in the survey itself. The professionals being surveyed will likely be familiar with at least some aspects of the project in question. Any attempt at duplicity could result in bad data or a refusal to participate.

In a SoC survey, it is vital that respondents have the necessary qualifications to provide opinions about the subject matter at hand.

- In fact, if you are able to pre-screen invitees (i.e., with information from professional associations, etc.), this could be your first step even before invitations.



The investigation professional will have to decide what qualifies a surveyed professional to participate.

- Be careful here, it could affect your ability to use the results for litigation!

Screening questions need to be designed accordingly. At a minimum, the following should be determined:

- The appropriate licensing or credentials.
- Length of practice.
- Experience with issue(s) covered in questionnaire.
- Experience with specific circumstances of current subject matter.

## Options for “Screened Out” Respondents

- Terminate the survey
- Allow them to complete the survey but do not save the data

This may be a better option where the pool of potential respondents is small, since it won't potentially embarrass an unqualified individual.



## No Matter What

Treat potential respondents in such a way that they are not ‘soured’ on the experience and will participate in future surveys for which they may be qualified.

- Usually comes after the qualification of respondents.
- BUT in some cases, you may need to provide an introduction before the screening questions.
  - If it is important to determine whether or not the prospective respondent has enough experience with a particular process to provide an opinion, the fact that the survey will talk about that process must be introduced.



## Example

*“This survey concerns foundation design for multi-story residential buildings in the Houston, Texas area. In particular, the survey will ask about the use of post-tensioned reinforcement. Even if you have not used that particular reinforcement method yourself, if you feel that you know enough about its use to provide an informed opinion, we would like to hear your thoughts.”*

Once the respondents have been invited, qualified, and introduced to the survey, it is time to start educating them on your case facts.

- Provide a concise enumeration of the facts
- Do not editorialize (it can cause bias)
- Do not discuss the reasons for what was done (nor, if possible, what happened as a result)



Let's look at some examples.

### Case 1:

- A large condominium project was built in six phases, spread out over several years. For Phases 1 through 6, the soils engineer recommended the foundation be a drilled pier type, and that the piers be 4 feet deep.
- When construction of Phase 4 started, due to changes in local practices, the soils engineer recommended the pier depth be changed to 6 feet. The structural engineer adopted this revised recommendation for Phase 4.
- Later, during construction of Phases 5 and 6, the structural engineer specified 4 feet deep piers.
- All the buildings in all six phases were of the same design, based on the same soil conditions.

Notice that Case 1 does not mention that anything happened to any of the buildings, only that the structural engineer followed the revised pier depth for Phase 4, but reverted back to the earlier recommendation for Phases 5 and 6. The survey would only ask respondents what they would have done in these circumstances.



## Case 2:

- A structural engineer provided design services to a subcontractor who was building a retaining wall for a developer.
- The subcontractor had selected a proprietary retaining wall system utilizing precast, prestressed concrete modules to be assembled into a crib wall and reinforced earth type retaining structure.
- The structural engineer had never designed such a wall before.
- The retaining wall system vendor provided sample calculations to the structural engineer as an example of how to design the wall.
- The structural engineer used the calculation method provided.
- Unknown to the vendor or the structural engineer, the method provided by the vendor included errors.
- After the wall was completed, during heavy rains, a portion of the wall failed.
- A renowned experienced forensic engineer who had designed and analyzed "thousands of these walls," and who had developed his own calculation method, described the structural engineer as negligent.

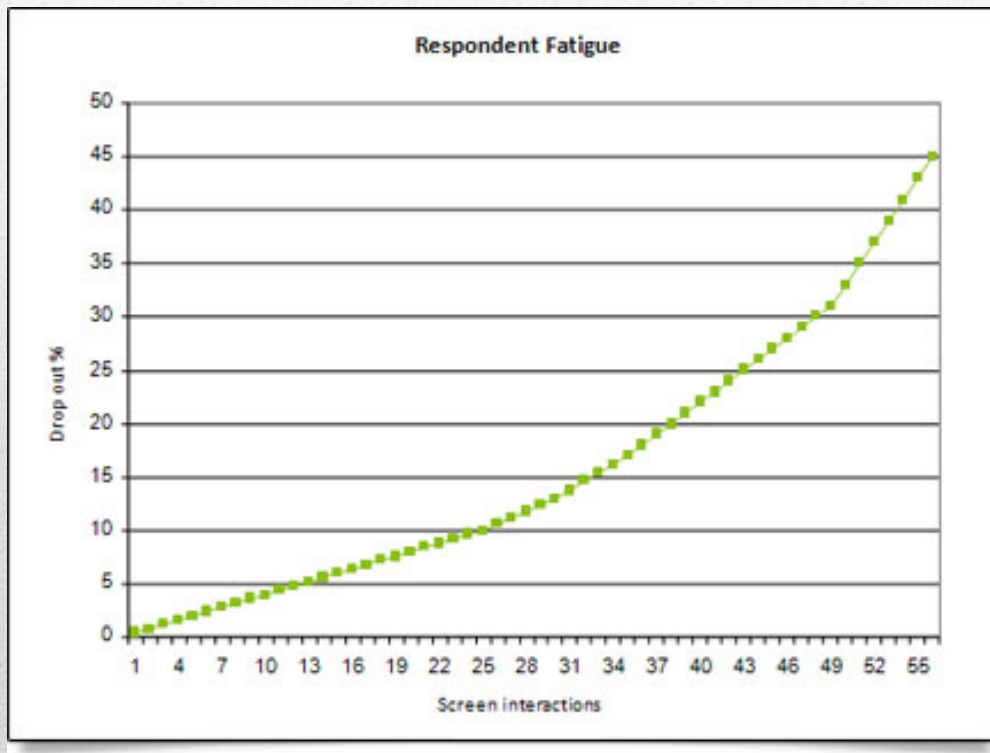
A survey in Case 2 would need to determine whether the renowned forensic engineer was applying too stringent of a standard. To do that, the survey would ask:

- If respondents have designed unfamiliar proprietary retaining wall systems for which they were provided formulas from the systems supplier;
- If respondents used the formulas provided by systems suppliers before;
- If respondents would have relied upon the above formulas in these circumstances;
- If respondents would have confirmed the accuracy of the supplied formulas under these circumstances.



In general, the shorter the survey the better.

Long, detailed surveys cause respondent fatigue and data quality begins to suffer.



## Section 5.2.5 – Length of Survey

Long surveys also affect response rate, which is one of the most important factors in judging how much confidence can be placed in the data.

- If 14 out of 15 participate, the associated confidence is much higher than if only 8 participate (leaving one to wonder what the other 7 would have said).



This survey response will not help you . . .



- With a paper survey it is important to include clear, concise instructions on how the respondent should navigate the survey.
- With an online survey, the programming navigates for the respondent.



Generally the flow of the questionnaire should follow the statements of fact to the extent that the statements of fact are part of the contentious issues.

- Do not jump around!

# **Gathering good data requires good questions!**

Here are some tips



- Avoid abbreviations, jargon and acronyms even if they are commonly used.
- Avoid leading questions.
- Avoid compound questions.
- Allow for “Don’t Know” or “Undecided” responses.
- Use simple, direct language.
  - Do not use uncommon words or long sentences; brief is better.

- Choose wording VERY carefully

Investigators have found that these words do not mean the same thing to all people, so avoid them:

- Usually
- Often
- Sometimes
- Occasionally
- Seldom
- Rarely



- Choose wording VERY carefully

The following adjectives and phrases have highly variable meanings and should be avoided in any survey:

- Most
- Numerous
- A substantial majority
- A large proportion of...
- A significant number of...
- A considerable number of...
- Several

- Choose wording VERY carefully

The following adjectives generally have more shared meaning and produce less variability in responding:

- Lots
- Almost all
- Nearly all
- A majority of
- A small number of
- Not very many
- Almost none
- A couple
- A few



The final test of a survey is to try it on representatives of the target audience.

- If possible, be present while a respondent is completing the survey and tell the respondent it is ok to ask questions for clarification, or comment on confusing items.
- The questions must have no ambiguity, because once the survey is in the field it is too late to correct it.

- Many opinion/awareness surveys use large samples of hundreds or thousands of randomly selected households.
  - That is because the researcher wants statistically reliable data (i.e., +/- 5%).
- In standard of care surveys there will be a much smaller sample because there is not as large a universe of potential participants.
  - The pool is narrowed even more when “professionals of similar training, working in the same area” are considered.



There is a large body of evidence that anonymity increases participation in surveys and allows for the collection of better data.

- However, a court may not permit a professional to testify about a standard of care based on an anonymous survey.
  - Discuss with a party's legal counsel to ensure that an appropriate balance is struck.

Once you receive the survey results, you have to analyze them to see what they indicate.

- This step may require consultation with legal or opinion research professionals.



- Note that it is not always the case that a single standard of care applies.
- If the professional could discharge his duty by performing a task in multiple ways, then there would be multiple standards of care applicable to that particular situation.

# Section 6.0 - Example



Following are the circumstances of a negligence case in which the walls of a residence cracked within 6 years of the date of substantial completion.

The owner of the residence contended that the failure was due to improper foundation design.

- Specifically, the owner complained that builder's piers were not structurally connected to the foundation, but should have been, given the existence of void spaces only under the slab.

## Objective of Questionnaire

Determine whether or not in 2005, in Houston, Texas, an engineer of ordinary prudence would structurally connect grade beams to builder's piers when there are void spaces only under the slab and (if so) determine how they would have been connected.



## Establish Qualifications

The individual being surveyed should hold the same professional license or registration as the defendant and should be knowledgeable in the area of practice of the defendant and offer opinions based on the person's knowledge, skill, experience, education, training, and practice.

## Invitation

*I am Sam Smith, a consultant to engineering firms. A question has arisen about some of the methods utilized in a project in the Houston area.*

*I am conducting a brief survey of professionals who work in the Houston area to determine how they would approach some of the issues in this project.*

*This survey concerns foundation design for a residential building in Houston, Texas.*

*The survey should take only about 10 minutes of your time and I am offering to share the results of the survey with the professionals who participate.*

*If you would like a copy of the results, please provide full contact information.*

*Sincerely,  
Sam Smith, P.E.*



## Questionnaire

Thank you for agreeing to participate in this survey.

To begin, we have a few questions about your training and experience:

1. Were you a licensed professional engineer in Texas in 2005?

- ☐ YES {Continue}
- ☐ NO {Terminate}

2. Do you currently engineer foundations for one or two family residential structures?

- ☐ YES {Continue}
- ☐ NO {Continue}

## Questionnaire

3. Did you engineer residential foundations in Houston, Texas, during the years 2004 through 2006?

- ☐ YES {Go to Question 5}
- ☐ NO {Go to Question 4}

4. Were you qualified to design residential foundations in Houston, Texas, during the years 2004 through 2006?

- ☐ YES {Continue}
- ☐ NO {Terminate}

5. Were some of the residential foundations you engineered on soil with a plasticity index greater than or equal to the mid 30's or on soil with a potential vertical rise greater than or equal to 2 inches?

- ☐ YES {Continue}
- ☐ NO {Terminate}



## Questionnaire

The subject of this survey is tying grade beams to piers. The particular circumstances of this survey are:

- Residential building in Houston, Texas
- Time frame is 2005
- Stiffened slab on ground foundation with drilled concrete piers
- Soils have an effective plasticity index of 35
- Potential Vertical Movement of the soil is 2 inches
- There were no void spaces under the grade beams
- There were void spaces under the slab

## Questionnaire

6. In these circumstances, would you structurally connect the grade beams to the piers?

- ☐ YES {Continue}
- ☐ NO {Skip to question 8}
- ☐ NEED ADDITIONAL INFORMATION - SPECIFY {THEN TERMINATE}



## Questionnaire

7. How would you structurally connect the grade beams to the piers?

- ☐ Extend the pier shaft rebar into the grade beam a short distance (i.e. 6 inches) specifying the rebar to be vertical and to be either smooth dowels or sleeved rebar such that the grade beam can later lift off the pier shaft but cannot move laterally with respect to the pier.
- ☐ Extend the pier shaft rebar into the grade beam at an unspecified length that may be installed less than required for minimum development length in ACI-318.
- ☐ Extend the pier steel into the grade beam specifying that it be bent 90 degrees to resist uplift.
- ☐ Extend the pier shaft rebar vertically into the grade beam sufficient to meet the minimum development length specified in ACI-318.
- ☐ Provide threaded rod dowels at the top of the pier shaft that can later be extended with more threaded rod length with anchor plates when the grade beam steel is being erected.
- ☐ Other (Please specify).

## Questionnaire

8. That completes the survey. Thank you for your participation. If you would like to receive a copy of the results of this survey, please provide your contact information in the space provided.



- The use of survey methods to determine how a "professional of ordinary prudence" would handle a particular situation can vary from a very informal, "check with a couple of colleagues," to a professionally executed formal survey to prepare for litigation.
- For ease of reference, those levels have been labeled Levels A, B, and C.
- If performed correctly, the results of the higher levels are more reliable.

**Level A** – This is the lowest level of inquiry.

- Can be used as part of a due diligence inquiry prior to beginning a project to find out how other professionals in the area are addressing the relevant issue(s).
- Can be an oral or written survey using a sample size as small as three or four professionals.
  - If the results are not sufficiently conclusive, then use a larger sample.
  - If an oral survey is used, it is recommended that the results be documented.
- This level of inquiry is probably not sufficient for use in litigation.



**Level B** – A written survey, not prepared or conducted by a professional research consultant, employing a larger sample than Level A and which may include a more comprehensive inquiry than Level A.

- Can be used to clarify inconclusive or conflicting results of a Level A survey.
- An appropriately designed Level B survey may be sufficient for use in a litigation context.

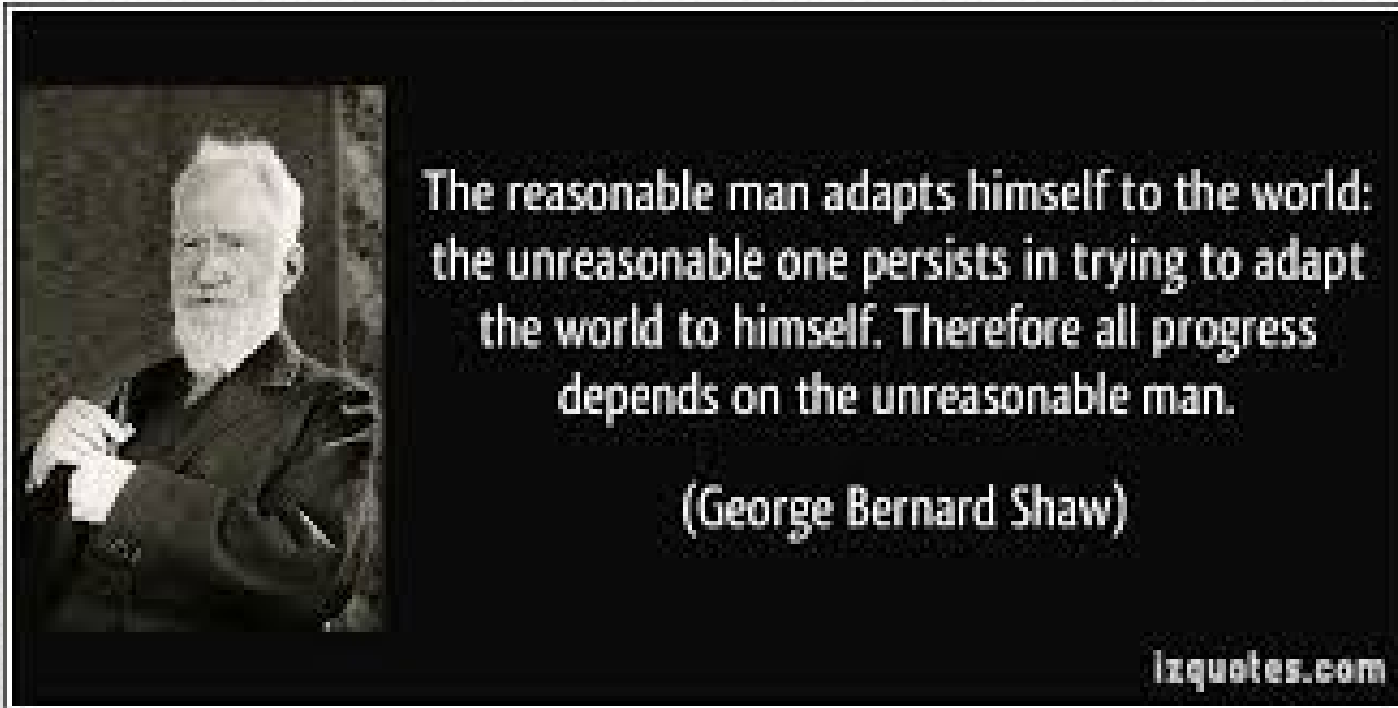
**Level C** – A written survey generally prepared by and/or conducted by a professional research consultant.

- Due to the added time and expense, a Level C survey may only be cost justified for use in litigation or other high-profile situations.





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# Paradox?

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## Paper Location

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# The End