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High Strain-rate Testing of Mechanical Couplers - Stephen P. Rowell 2009

Structures to Resist the Effects of Accidental Explosions - 1991

Protecting People and Buildings from Terrorism - National Research Council 2002-01-31

Concerned with the vulnerability of U.S. civilian and military personnel to terrorist bombing attacks, the U.S. Congress directed the Department of Defense to undertake a comprehensive research and testing program aimed at protecting people in buildings from such attacks. The Blast Mitigation for Structures Program (BMSP) was initiated in 1997 and has produced a large volume of experimental and analytical data that will permit the design of new, more robust buildings as well as the development of methods to retrofit a large number of vulnerable existing structures. This report reviews the BMSP program and investigates a process that would use existing institutional infrastructures (i.e., building code and standards-writing organizations, professional and technical organizations, universities, and research centers) to disseminate knowledge.

Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings - Michael Chipley 2003

The text provides guidance to the building science community of architects and engineers, to reduce physical damage to buildings, related infrastructure, and people caused by terrorist assaults. It presents incremental approaches that can be implemented over time to decrease the vulnerability of buildings to terrorist threats. Many of the recommendations can be implemented quickly and cost-effectively. The manual contains many how-to aspects based upon current information contained in Federal Emergency Management Agency (FEMA), Department of Commerce, Department of Defense, Department of Justice, General Services Administration, Department of Veterans Affairs, Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health, and other publications. It describes a threat assessment methodology and presents a Building Vulnerability

Assessment Checklist to support the assessment process. It also discusses architectural and engineering design considerations, standoff distances, explosive blast, and chemical, biological, and radiological (CBR) information. The appendices includes a glossary of CBR definitions as well as general definitions of key terminologies used in the building science security area. The appendices also describe design considerations for electronic security systems and provide a listing of associations and organizations currently working in the building science security area.

AMC Regulation - United States Department of the Army 1985

Primer for Design of Commercial Buildings to Mitigate Terrorist Attacks - 2003

Manual contains extensive qualitative design guidance for limiting or mitigating the effects of terrorist attacks, focusing primarily on explosions, but also addressing chemical, biological, and radiological attacks.

Vibration and Shock Handbook - Clarence W. de Silva 2005-06-27

Every so often, a reference book appears that stands apart from all others, destined to become the definitive work in its field. The Vibration and Shock Handbook is just such a reference. From its ambitious scope to its impressive list of contributors, this handbook delivers all of the techniques, tools, instrumentation, and data needed to model, analyze, monitor, modify, and control vibration, shock, noise, and acoustics. Providing convenient, thorough, up-to-date, and authoritative coverage, the editor summarizes important and complex concepts and results into "snapshot" windows to make quick access to this critical information even easier. The Handbook's nine sections encompass: fundamentals and analytical techniques; computer techniques, tools, and signal analysis; shock and vibration methodologies; instrumentation and testing; vibration suppression, damping, and control; monitoring and diagnosis; seismic vibration and related regulatory issues; system design, application, and control implementation; and acoustics and noise suppression. The book also features an extensive glossary and convenient cross-referencing, plus references at the end of each chapter. Brimming with illustrations, equations, examples, and case studies, the Vibration and Shock

Handbook is the most extensive, practical, and comprehensive reference in the field. It is a must-have for anyone, beginner or expert, who is serious about investigating and controlling vibration and acoustics.

Blast Resistant Capacity of 12 Inch Reinforced Concrete Substantial Dividing Walls in Accordance with TM5-1300 - 1990

Twelve-inch reinforced concrete walls have been constructed for many years within DoD munitions facilities and the commercial explosive industry to limit blast effects from accidental explosions. Such walls are a special category of "Dividing Walls" as defined by DoD explosive safety standards. Specific explosive limits are defined for such existing walls. However use of these walls for new operations or new construction requires performance based on rational methods of structural dynamics given in TM5-1300, "Design of Structures to Resist the Effects of Accidental Explosions". This paper discusses the performance of 12 inch Reinforced concrete walls and provides charts and figures which demonstrate the blast resistant capacity of such walls in several common configurations.

Structures Under Shock and Impact XII - G. Schleyer 2013

Of interest to engineers from civil, military, nuclear, offshore, aeronautical, transportation and other backgrounds, this book contains the proceedings of a well-established conference on the subject that was first held in 1989. Topics covered include: Impact and Blast Loading Characteristics; Protection of Structures from Blast Loads; Energy Absorbing Issues; Structural Crashworthiness; Hazard Mitigation and Assessment; Behaviour of Steel Structures; Behaviour of Structural Concrete; Material Response to High Rate Loading; Seismic Engineering Applications; Interaction Between Computational and Experimental Results; Innovative Materials and Material Systems; Fluid Structure Interaction. The shock and impact behaviour of structures presents challenges to researchers not only because it has obvious time-dependent aspects, but also because it is difficult to specify the external dynamic loading characteristics and to obtain the full dynamic properties of materials. It is crucial that we find ways to share the contributions and understanding that are developing from various theoretical, numerical and experimental studies, as well as investigations into material properties under dynamic loading conditions. This book helps to meet that need.

Structural Design Criteria for Structures Other Than Buildings - 1992

Corps of Engineers Structural Engineering Conference - 1996

Computational Analysis and Design of Bridge Structures - Chung C. Fu 2014-12-11

Gain Confidence in Modeling Techniques Used for Complicated Bridge Structures Bridge structures vary considerably in form, size, complexity, and importance. The methods for their computational analysis and design range from approximate to refined analyses, and rapidly improving computer technology has made the more refined and complex methods of

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Protecting Buildings from Bomb Damage - Committee on Feasibility of Applying Blast-Mitigating Technologies and Design Methodologies from Military Facilities to Civilian Buildings 1995-11-09

This book provides a brief overview of worldwide terrorist activity and reviews technologies and methods for designing blast resistant buildings. These techniques, primarily developed by the military, have applicability and relevance to the design of civilian structures. The volume recommends that a program of applied research and technology transfer be undertaken to hasten the availability and utility of these techniques to the civilian building community.

Comparison of US Blast Design Guidance Documents - 2010

For many years, the US Department of Defense has maintained two primary blast design manuals, UFC 3-340-01 (formerly Army TM 5-855-1/Air Force AFPAM 32-1147(I)/Navy NAVFAC P-1080/DSWA DAHSCWEMAN-97), "Design and Analysis of Hardened Structures to Conventional Weapons Effects" and UFC 3-340-02 (formerly Army TM 5-1300/Navy NAVFAC P-397/Air Force AFR 88-22), "Structures to Resist the Effects of Accidental Explosives." More recently, the American Society of Civil Engineers has established a technical committee to develop a new blast design standard for antiterrorism applications, based largely upon criteria and guidance issued by the US Army Corps of Engineers Protective Design Center. In this paper, we will investigate the scope and application of these blast guidance documents. Particular attention will be paid to each manual's performance and design objectives as implemented through their respective protection categories and resulting structural design requirements.

Blast and Ballistic Loading of Structures - John Hetherington 2014-04-21

This book brings together, in a concise format, the key elements of the loads produced from explosive sources, and how they interact with structures. Explosive sources include gas, high explosives, dust and nuclear materials. It presents quantitative information and design methods in a useable form without recourse to extensive mathematical analysis. The authors, Peter Smith and John Hetherington, are staff members at the Royal Military College of Science in Shrivenham and have been instrumental in establishing an active team studying the response of structures to blast and ballistic loading.

Insurance, Finance, and Regulation Primer for Terrorism Risk Management in Buildings - 2003

Science and Technology for Army Homeland Security - National Research Council 2003-05-08

The confluence of the September 11, 2001 terrorist attack and the U.S. Army's historic role to support civil authorities has resulted in substantial new challenges for the Army. To help meet these challenges, the Assistant Secretary of the Army for Research and Technology requested the

National Research Council (NRC) carry out a series of studies on how science and technology could assist the Army prepare for its role in homeland security (HLS). The NRC's Board on Army Science and Technology formed the Committee on Army Science and Technology for Homeland Security to accomplish that assignment. The Committee was asked to review relevant literature and activities, determine areas of emphasis for Army S&T in support of counter terrorism and anti-terrorism, and recommend high-payoff technologies to help the Army fulfill its mission. The Department of Defense Counter-Terrorism Technology Task Force identified four operational areas in reviewing technical proposals for HLS operations: indications and warning; denial and survivability; recovery and consequence management; and attribution and retaliation. The study sponsor asked the Committee to use these four areas as the basis for its assessment of the science and technology (S&T) that will be important for the Army's HLS role. Overall, the Committee found that: There is potential for substantial synergy between S&T work carried out by the Army for its HLS responsibilities and the development of the next generation Army, the Objective Force. The Army National Guard (ARNG) is critical to the success of the Army's HLS efforts.

Steel and Composite Structures - Y. C. Wang 2018-05-08

Over 150 papers representing the most recent international research findings on steel and composite structures. Including steel constructions; buckling and stability; codes; composite; control; fatigue and fracture; fire; impact; joints; maintenance; plates and shells; retrofitting; seismic; space structures; steel; structural analysis; structural components and assemblies; thin-walled structures; vibrations, and wind. A special session is dedicated on codification. A valuable source of information to researchers and practitioners in the field of steel and composite structures.

Reference Manual To Mitigate Potential Terrorist Attacks Against Buildings
- Department of Homeland Security. Federal Emergency Management Agency 2003

Case Study of Structural Modifications to Existing Explosives

Manufacturing Facility for Enhanced Capabilities and Increased Personnel Safety - 1994

The AMC-R 385-100 Safety Manual requires that facility modernization efforts involving an increase in explosive limits include provisions to upgrade existing facilities to meet explosion resistant construction criteria set forth in TM 5-1300, "Structures To Resist The Effects of Accidental Explosions." Through a Safety Enhancement Modernization project for a Lead Styphnate and Tetracene manufacturing facility, analysis was conducted to determine the structural sufficiency of the kettle room reinforced concrete walls (RCW) to withstand the gas and shock pressures generated by increased explosive quantities while providing Protection Category I per TM 5-1300 for facility operating personnel. The RCW were analyzed at 2 degrees deflection as allowed for Protection Category I and

were found to be insufficient to provide personnel protection during an incident of proposed increased explosive limits. The RCW were then analyzed to determine their explosive resistance in accordance with current TM construction criteria. The walls were found to have structural sufficiency adequate for an explosive limit significantly below the proposed modernization quantities and at no better than Protection Category IV. Different methods were considered which would strengthen the walls to current TM standards for increased explosive limits and provide increased personnel protection. The considered solution is a partial rebuild of the facility that will be designed in accordance with the 1990 edition of TM 5-1300.

Blast Resistant Design of Steel Structures - 2007

The purpose of this study was to examine the load experienced by a steel blast cubicle from a surface blast test. An important objective was to determine the blast load experienced at different standoff distances and the blast resistance capability of the blast cubicle. Three cubicles with standoff distances of 20, 25, and 30ft respectively were simultaneously subjected to a 50lb TNT explosive. The manual Structures to Resist the Effects of Accidental Explosions, Army TM 5-1300 conservatively predicted the blast pressure loadings obtained from the pressure transducers mounted on the cubicles. Data collected from accelerometers was compared to results from the analysis program SDOF. The cubicle walls exhibited elastic behavior without any visible permanent deformation. The wall facing the blast was found to experience the greatest loading and was the critical member. The roof, however, experienced substantial deformation. As the standoff distance from the blast increased the pressure loading experienced by the cubicles decreased. The cubicle closest to the blast was likely close to its limit. Thus the structural design of the blast cubicle was efficient and economical without waste of construction material.

Nuclear Regulatory Commission Issuances - U.S. Nuclear Regulatory Commission 1984

Design of Steel Structures to Resist the Effects of HE Explosions - John Healey 1975

Advances in Protective Structures Research - Hong Hao 2012-08-17

The International Association of Protective Structures (IAPS) was launched on 1 October 2010 in Manchester, UK during the first International Conference of Protective Structures. The primary purpose of IAPS is to bring researchers and engineers working in the area of protective structures together, and to promote research and development work for better life and structure protection against shock and impact loads. More information can be found at <http://www.protectivestructures.org/contact.html>. Advances in Protective Structures Research is the first publication in a series of planned

publications by IAPS. It contains 13 chapters prepared by active and prominent researchers around the world in the area of protective structures. It covers the dynamic material model and material properties, structural response analysis, structural reliability analysis, impact loads and ground shock. The contents of the book reflect well the current research achievements and practice in structural protection against blast and impact loads. They represent the advanced international research status in theoretical derivations, numerical simulations, and laboratory and field tests for structure protections.

Urban Habitat Constructions Under Catastrophic Events - Federico M. Mazzolani 2010-08-30

COST is an intergovernmental framework for European Cooperation in Science and Technology, allowing the coordination of nationally-funded research on a European level. Part of COST was COST Action C26Urban Habitat Constructions Under Catastrophic Events which started in 2006 and held its final conference in Naples, Italy, on 16-18 September 2011

Fluid Structure Interaction VI - Alain J. Kassab 2011

This book comprises contributions on new developments in fluid structure interaction problems, presented at sixth in a successful series of biennial conferences that began in 2001. The international experts assembled at the conference will discuss a variety of topics, including: Fluid pipeline interactions, Structure response to severe shock and blast, Hydrodynamic forces, Acoustics and noise, Computational methods, Response of structures, including fluid dynamics, Flow induced vibrations, Experimental studies and validation, Bioengineering applications, Offshore structures and pipelines, Subsea systems, and Soil structure interaction.

Fixed Offshore Platforms: Structural Design for Fire Resistance - Mavis Sika Okyere 2018-06-19

This book examines the fire-resistant design of fixed offshore platforms. It describes the required loading, load combinations, strength and stability checks for structural elements. It also explains the design of tubular joints, fatigue analysis, dynamic analysis, and impact analysis, Fire resistance, fire, explosion and blast effect analysis, fire protection materials, and safety.

Contents of Structures to Resist the Effects of Accidental Explosions (TM 5-1300, NAVFAC P-397, AFM 22). - Joseph Caltagirone 1986

Procedures for structures designed to resist the effects of HE type explosions are presently available in the Tri-Service Design Manual Structures to Resist the Effects of Accidental Explosions (TM 5-1300, NAVFAC P-397, AFM 88- 22). However, these procedures are limited to reinforced concrete structures. Since its original publication, a considerable amount of data has been generated which brought about the requirement to revise existing procedures in the manual and incorporate new data. This describes the differences between the old and new manual and discusses the additional data incorporated in the new manual.

Manuals Combined: EOD, UXO, IED, DEMOLITION MATERIALS, LAND

MINE WARFARE, MINE/COUNTERMINE OPERATIONS AND PHYSICAL SECURITY OF ARMS, AMMUNITION, AND EXPLOSIVES - 2018-01-16

Over 3,700 total pages ... The Manuals and Publications included:
IMPROVISED EXPLOSIVE DEVICE (IED) W3H0005XQ STUDENT HANDOUT IMPROVISED EXPLOSIVE DEVICE (IED) B3L0487XQ-DM STUDENT HANDOUT MOTORIZED CONVOY OPERATIONS B4P0573XQ-DM STUDENT HANDOUT TECHNICAL MANUAL ARMY AMMUNITION DATA SHEETS FOR DEMOLITION MATERIALS TECHNICAL MANUAL OPERATORS AND ORGANIZATIONAL MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST) DEMOLITION MATERIALS IMPROVISED EXPLOSIVE DEVICE (IED) DEFEAT LAND-MINE WARFARE OPERATOR'S AND UNIT MAINTENANCE MANUAL FOR LAND MINES TECHNICAL MANUAL DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL FOR LAND MINES TECHNICAL MANUAL OPERATOR'S MANUAL FOR BODY ARMOR SET, INDIVIDUAL COUNTERMINE (BASIC) OPERATOR'S MANUAL MINE FIELD MARKING SET HAND EMPLACEABLE M133 ORDNANCE AND EXPLOSIVES RESPONSE MULTISERVICE PROCEDURES FOR UNEXPLODED ORDNANCE OPERATIONS EOD - MULTI-SERVICE TACTICS, TECHNIQUES, AND PROCEDURES FOR EXPLOSIVE ORDNANCE DISPOSAL IN A JOINT ENVIRONMENT Physical Security of Arms, Ammunition, and Explosives DOD AMMUNITION AND EXPLOSIVES SAFETY STANDARDS INDIVIDUAL TRAINING STANDARDS (ITS) SYSTEM FOR AMMUNITION AND EXPLOSIVE ORDNANCE DISPOSAL OCCUPATIONAL FIELD (OCCFLD) 23 EXPLOSIVE ORDNANCE DISPOSAL (EOD) PROGRAM LIST OF STORAGE AND OUTLOADING DRAWINGS AND AMMUNITION Ammunition and Explosives Safety Standards DOE Explosives Safety Manual Individual Tasks, EQT (Explosives Hazards) Ammunition Handbook: Tactics, Techniques, and Procedures for Munitions Handlers Mine/Countermining Operations Munitions Handling During Deployed Operations – 101

Blast Protection of Civil Infrastructures and Vehicles Using Composites - Nasim Uddin 2010-03-12

With the upsurge in terrorism in recent years and the possibility of accidental blast threats, there is growing interest in manufacturing blast 'hardened' structures and retrofitting blast mitigation materials to existing structures. Composites provide the ideal material for blast protection as they can be engineered to give different levels of protection by varying the reinforcements and matrices. Part one discusses general technical issues with chapters on topics such as blast threats and types of blast damage, processing polymer matrix composites for blast protection, standards and specifications for composite blast protection materials, high energy absorbing composite materials for blast resistant design, modelling the blast response of hybrid laminated composite plates and the response of composite panels to blast wave pressure loadings. Part two reviews

applications including ceramic matrix composites for ballistic protection of vehicles and personnel, using composites to protect military vehicles from mine blasts, blast protection of buildings using FRP matrix composites, using composites in blast resistant walls for offshore, naval and defence related structures, using composites to improve the blast resistance of columns in buildings, retrofitting using fibre reinforced polymer composites for blast protection of buildings and retrofitting to improve the blast response of concrete masonry walls. With its distinguished editor and team of expert contributors, Blast protection of civil infrastructures and vehicles using composites is a standard reference for all those concerned with protecting structures from the effects of blasts in both the civil and military sectors. Reviews the role of composites in blast protection with an examination of technical issues, applications of composites and ceramic matrix composites Presents numerical examples of simplified blast load computation and an overview of the basics of high explosives includes important properties and physical forms Varying applications of composites for protection are explored including military and non-military vehicles and increased resistance in building columns and masonry walls

Vibration Monitoring, Testing, and Instrumentation - Clarence W. de Silva
2007-04-19

Controlling a system's vibrational behavior, whether for reducing harmful vibrations or for enhancing useful types, is critical to ensure safe and economical operation as well as longer structural and equipment lifetimes. A related issue is the effect of vibration on humans and their environment. Achieving control of vibration requires thorough understanding of system behavior, and *Vibration Monitoring, Testing, and Instrumentation* provides a convenient, thorough, and up-to-date source of tools, techniques, and data for instrumenting, experimenting, monitoring, measuring, and analyzing vibration in a variety of mechanical and structural systems and environments. Drawn from the immensely popular *Vibration and Shock Handbook*, each expertly crafted chapter of this book includes convenient summary windows, tables, graphs, and lists to provide ready access to the important concepts and results. The authors give equal emphasis to the theoretical and practical aspects, supplying methodologies for analyzing shock, vibration, and seismic behavior. They thoroughly review instrumentation and testing methods such as exciters, sensors, and LabVIEW® tools for virtual instrumentation as well as signal acquisition, conditioning, and recording. Illustrative examples and case studies accompany a wide array of industrial and experimental techniques, analytical formulations, and design approaches. The book also includes a chapter on human response to vibration. *Vibration Monitoring, Testing, and Instrumentation* supplies a thorough understanding of the concepts, tools, instruments, and techniques you need to know before the design process begins.

Blast-resistant Highway Bridges - Eric B. Williamson 2010

Explores code-ready language containing general design guidance and a

simplified design procedure for blast-resistant reinforced concrete bridge columns. The report also examines the results of experimental blast tests and analytical research on reinforced concrete bridge columns designed to investigate the effectiveness of a variety of different design techniques.

Modern Protective Structures - Theodor Krauthammer 2008-02-01

In today's world, reasonably predictable military operations have been replaced by low intensity conflicts-less predictable terrorist activities carried out by determined individuals or small groups that possess a wide range of backgrounds and capabilities. Because of the threats posed by this evolving type of warfare, civil engineers and emergency personnel face new challenges in designing facilities to protect lives and property and in conducting effective rescue operations and forensic investigations.

Addressing these needs, *Modern Protective Structures* develops realistic guidelines for the analysis, design, assessment, retrofit, and research of protected facilities. After introducing a comprehensive risk management approach, the author provides a general background on explosive devices and their capabilities as well as explosive effects and the processes that generate them. He then discusses the effects of conventional and nuclear explosions. The book subsequently considers the significant design differences between conventional and nuclear loads and between existing design procedures and state-of-the-art information from recent research. It also summarizes existing blast-resistant design approaches and describes the dynamic responses of structural systems to blasts, shocks, and impacts. Additional coverage includes the behavior of specific structural connections, the traditional concept of P-I diagrams, and progressive collapse. The book concludes with a systematic and balanced protective design approach. Tackling the analytical, design, assessment, and hazard mitigation issues associated with short-duration dynamic loads, this book examines how impulsive loads affect various types of buildings and facilities. It provides the necessary material to help ensure the safety of persons, assets, and projects.

Advances in Structural Engineering - Vasant Matsagar 2014-12-12

The book presents research papers presented by academicians, researchers, and practicing structural engineers from India and abroad in the recently held Structural Engineering Convention (SEC) 2014 at Indian Institute of Technology Delhi during 22 – 24 December 2014. The book is divided into three volumes and encompasses multidisciplinary areas within structural engineering, such as earthquake engineering and structural dynamics, structural mechanics, finite element methods, structural vibration control, advanced cementitious and composite materials, bridge engineering, and soil-structure interaction. *Advances in Structural Engineering* is a useful reference material for structural engineering fraternity including undergraduate and postgraduate students, academicians, researchers and practicing engineers.

Structural Design Criteria - United States. Department of the Army 1992

Concrete Structures Subjected to Impact and Blast Loadings and Their Combinations - Chunwei Zhang 2022-05-09

Although much research focuses on investigating the responses of reinforced concrete (RC) structures under sole impact or blast loads, the responses of RC structures under a combination of impact and blast loads currently represent a gap in our knowledge. The combined actions of impact and blast loadings may be applied to RC structures during accidental or intentional collision of vessels, vehicles, etc., carrying explosive materials. A comprehensive study on the vulnerability of various structural members is carried out using finite element (FE) simulations under combination of impact and blast loads with the variations of various loading- and structural-related parameters and key parameters. This book introduces various structural analysis approaches for concrete structures when subjected to extreme loads such as impact and blast loadings. The theory of the combinations of impact and blast loads is proposed that can provide primary insights to the specific readers to develop new ideas in impact and blast engineering, including combined actions of extreme loads arising from real-world intentional or accidental events. This book will be of value to students (undergraduate or postgraduate), engineers, and researchers in structural and civil engineering, and specifically, those who are studying and investigating the performances of concrete structures under extreme loads.

Design Against Blast - S. Syngellakis 2013

Terrorist attacks and other destructive incidents caused by explosives have, in recent years, prompted considerable research and development into the protection of structures against blast loads. For this objective to be achieved, experiments have been performed and theoretical studies carried out to improve our assessments of the intensity as well as the space-time distribution of the resulting blast pressure on the one hand and the consequences of an explosion to the exposed environment on the other. This book aims to enhance awareness on and understanding of these topical issues through a collection of relevant, Transactions of the Wessex Institute of Technology articles written by experts in the field. The book starts with an overview of key physics-based algorithms for blast and fragment environment characterisation, structural response analyses and structural assessments with reference to a terrorist attack in an urban environment and the management of its inherent uncertainties. A subsequent group of articles is concerned with the accurate definition of blast pressure, which is an essential prerequisite to the reliable assessment of the consequences of an explosion. Other papers are concerned with alternative methods for the determination of blast pressure, based on experimental measurements or neural networks. A final group of articles reports investigations on predicting the response of specific structural entities and their contents. The book concludes with studies on the effectiveness of steel-reinforced polymer in improving the performance

of reinforced concrete columns and the failure mechanisms of seamless steel pipes used in nuclear industry.

Overturning and Sliding Analysis of Reinforced Concrete Protective Structures - William Stea 1976

Structures to Resist the Effects of Accidental Explosions (TM 5-1300, NAVFAC P-397, AFM 88-22). Revision of Tri-Service Regulatory Design Manual - Angelo J. Castellano 1982

Initial guidance in the field of protective structures design was provided in 1969 with the publication of the Tri-Service Design Manual Structures to Resist the Effects of Accidental Explosions (TM 5-1300), NAVFAC P-397, AFM 88-22). The manual presents procedures for determining the blast effects resulting from an explosion and techniques for the design of reinforced concrete structures subjected to blast loads. A considerable amount of data, much of it not covered in the current manual, has been accumulated since its publication. This information has brought about the urgent requirement for revising the manual. This paper briefly describes the topics in the manual that will be revised, those that will be added, the format of the new manual, and the various committees set up to oversee the revision. (Author).

Handbook for Blast Resistant Design of Buildings - Donald O. Dusenberry 2010-01-26

Unique single reference supports functional and cost-efficient designs of blast resistant buildings Now there's a single reference to which architects, designers, and engineers can turn for guidance on all the key elements of the design of blast resistant buildings that satisfy the new ASCE Standard for Blast Protection of Buildings as well as other ASCE, ACI, and AISC codes. The Handbook for Blast Resistant Design of Buildings features contributions from some of the most knowledgeable and experienced consultants and researchers in blast resistant design. This handbook is organized into four parts: Part 1, Design Considerations, sets forth basic principles, examining general considerations in the design process; risk analysis and reduction; criteria for acceptable performance; materials performance under the extraordinary blast environment; and performance verification for technologies and solution methodologies. Part 2, Blast Phenomena and Loading, describes the explosion environment, loading functions needed for blast response analysis, and fragmentation and associated methods for effects analysis. Part 3, System Analysis and Design, explains the analysis and design considerations for structural, building envelope, component space, site perimeter, and building system designs. Part 4, Blast Resistant Detailing, addresses the use of concrete, steel, and masonry in new designs as well as retrofitting existing structures. As the demand for blast resistant buildings continues to grow, readers can turn to the Handbook for Blast Resistant Design of Buildings, a unique single source of information, to support competent, functional, and cost-efficient designs.