



< Back to results | < Previous 10 of 13 Next >

↗ Export ↕ Download 🖨 Print ✉ E-mail 📄 Save to PDF ☆ Add to List More... >

International Journal of Civil Engineering and Technology • Volume 8, Issue 8, Pages 408 - 415 • 2017

Document type

Article

Source type

Journal

ISSN

09766308

View more ▾

Numerical investigation of the buckling strength behavior of ring stiffened submarine pressure hull

Yudo H.^a, Windyandari A.^b, Zakki A.F.^a

📁 Save all to author list

^a Naval Architecture Department, Engineering Faculty, Diponegoro University, Semarang, 50275, Indonesia

^b Vocational Programs of Naval Architecture Department, Engineering Faculty, Diponegoro University, Semarang, 50275, Indonesia

6

Citations in Scopus

24

Views count ⓘ

View all metrics >

Abstract

Author keywords

SciVal Topics

Metrics

Abstract

A growing trend in the design of the submarine proves the need for increasing the level of water depth, especially for the military activities. Moreover, the complexity of modern submarines and their demand for efficiency, safety, and greater reliability, is a challenge for designers in making the design of submarine particular component known as pressure hull. The pressure hull is the main load-bearing structure in a naval submarine. The basic structural component is a ring-stiffened cylindrical metallic shell under an external hydrostatic pressure load. The ring-stiffeners forestall buckling of the shell until the material exhibits yielding, thereby taking advantage of the full material strength and increasing the structural efficiency. The aim of the paper is to investigate the buckling strength behavior of ring stiffened submarine pressure hull. The influence of the bulkhead positions on the buckling strength

Cited by 6 documents

Investigation Of Structural Response Of Floor Panel Unit On The Portable Blast Room Using Finite Element Method

Windyandari, A. , Huboyo, H.S. , Zakki, A.F.
(2020) *ARPN Journal of Engineering and Applied Sciences*

The synthesis and characterization of nanomaterial ZnO-CuO PP as an anticorrosive material on the ship hull using an electrochemical method

Sugeng, S. , Ridwan, M. , Sulaiman
(2019) *International Journal of Mechanical Engineering and Technology*

Comparison of propeller type B-series and Au-outline GAWN series for improving on submarine propulsion performance using CFD

Chrismianto, D. , Zakki, A.F. , Arswendo, B.
(2019) *International Journal of Advanced Research in Engineering and Technology*

View all 6 citing documents

Inform me when this document is cited in Scopus:

Set citation alert >

Related documents

Study of the nonlinear responses of a submersible pressure hull

Liang, C.-C. , Lai, W.-H. , Hsu, C.-Y.
(1998) *International Journal of Pressure Vessels and Piping*

Structure design and characteristic analysis of buckling strength on swedge frame pressure hull with finite element analysis

Zakki, A.F. , Bae, D.M. , Susilo, S.
(2017) *ARPN Journal of Engineering and Applied Sciences*

Source details

International Journal of Civil Engineering and Technology

Scopus coverage years: from 2016 to 2019

(coverage discontinued in Scopus)

Publisher: IAEME Publication

ISSN: 0976-6308 E-ISSN: 0976-6316

Subject area: Engineering: Building and Construction Engineering: Civil and Structural Engineering

Computer Science: Computer Networks and Communications Engineering: Control and Systems Engineering

Source type: Journal

CiteScore 2017
1.4 ⓘ

SJR 2019
0.285 ⓘ

SNIP 2021
0.478 ⓘ

[View all documents >](#) [Set document alert](#)  [Save to source list](#) [Source Homepage](#)

CiteScore CiteScore rank & trend Scopus content coverage

i

Improved CiteScore methodology

CiteScore 2017 counts the citations received in 2014-2017 to articles, reviews, conference papers, book chapters and data papers published in 2014-2017, and divides this by the number of publications published in 2014-2017. [Learn more >](#)

×

CiteScore 2017 ▾

1.4 = $\frac{2,682 \text{ Citations 2014 - 2017}}{1,977 \text{ Documents 2014 - 2017}}$

Calculated on 01 May, 2018

CiteScore rank 2017 ⓘ

Category	Rank	Percentile
Engineering		
Building and Construction	#84/167	50th
Engineering		
Civil and Structural Engineering	#154/285	46th

INTERNATIONAL JOURNAL OF CIVIL ENGINEERING & TECHNOLOGY (IJCET)

JOURNAL IMPACT FACTOR (2020): 11.3296 CALCULATED BY
GLOBAL INSTITUTE FOR SCIENTIFIC INFORMATION (GISI)
(www.jifactor.com)

High Quality Peer Reviewed Refereed Scientific, Engineering & Technology,
Medicine and Management International Journals

PUBLISHED BY



International Association for Engineering and Management Education (IAEME)
Plot: 03, Flat- S 1, Poomalai Santosh Pearls Apartment,
Plot No. 10, Vaiko Salai 6th Street, Jai Shankar Nagar, Palavakkam, Chennai - 600 041,
Tamilnadu, India
E-mail : editor@iaeme.com, ieamedu@gmail.com
www.iaeme.com

Current Issue (https://iaeme.com/Home/current_issue/IJCIET) Peer Review Policies
 (https://iaeme.com/Home/journal_editorial_policy/IJCIET) Publication Ethics
 (https://iaeme.com/Home/publication_ethics/IJCIET) Submit Online
 (https://iaeme.com/Page/online_paper_submission)

Articles **Archive** (<https://iaeme.com/Home/issue/IJCIET?Volume=13&Issue=1>) **Subject Area**

Indexing **Aims & Scope** **Editorial Board** **For Authors** **Publication Fees**

Chief Editor

Dr. Kadhim Naief Kadhim

Professor, Department of Civil Engineering, College of Engineering, University of Babylon, IRAQ

Email : altaee_kadhim@yahoo.com (mailto:altaee_kadhim@yahoo.com)
 Institutional Profile : <https://staff.uobabylon.edu.iq/profile.aspx?id=51326>
 (<https://staff.uobabylon.edu.iq/profile.aspx?id=51326>)
 Google Scholar : <https://scholar.google.com/citations?user=A4Naa3YAAAAJ&hl=en>
 (<https://scholar.google.com/citations?user=A4Naa3YAAAAJ&hl=en>)
 ORCID : <http://orcid.org/0000-0001-5253-1290> (<http://orcid.org/0000-0001-5253-1290>)
 Publon : <https://publons.com/researcher/N-2451-2019/>
 (<https://publons.com/researcher/N-2451-2019/>)
 Research Gate : <https://www.researchgate.net/profile/Kadhim-Al-Taee>
 (<https://www.researchgate.net/profile/Kadhim-Al-Taee>)

Editorial Board:

Dr. H.T. Basavarajappa

Professor of Earth Science, Department of Studies in Earth Science, University of Mysore, India

Email : basavarajappaht@gmail.com (<mailto:basavarajappaht@gmail.com>)
<http://uni-mysore.ac.in/english-version/earth-science/faculty/dr-basavarajappa-ht>
 Institutional Profile : (<http://uni-mysore.ac.in/english-version/earth-science/faculty/dr-basavarajappa-ht>)
 Google Scholar : <https://scholar.google.co.in/citations?user=hv6jOSIAAAAJ&hl=en>
 (<https://scholar.google.co.in/citations?user=hv6jOSIAAAAJ&hl=en>)
 Research Gate : <https://www.researchgate.net/lab/BASAVARAJAPPA-H-T-Lab>
 (<https://www.researchgate.net/lab/BASAVARAJAPPA-H-T-Lab>)

Dr. Saleh Abd El-Aleem Mohammed El-Awney

Professor, Faculty of Science, Fayoum University, Fayoum, **Egypt**

Email : saa09@fayoum.edu.eg (<mailto:saa09@fayoum.edu.eg>)
 Institutional Profile : <http://www.fayoum.edu.eg/English/scien/Chemistry/DrSaleh.aspx>
 (<http://www.fayoum.edu.eg/English/scien/Chemistry/DrSaleh.aspx>)

Google Scholar : <https://scholar.google.com/eg/citations?user=PXmbSNUAAAAJ&hl=en>
 (https://scholar.google.com/eg/citations?user=PXmbSNUAAAAJ&hl=en)
 ORCID : <https://orcid.org/0000-0002-2484-6356> (https://orcid.org/0000-0002-2484-6356)
<https://publons.com/researcher/1609447/prof-drsaleh-abd-el-aleem-mohammed-el-awney/> (https://publons.com/researcher/1609447/prof-drsaleh-abd-el-aleem-mohammed-el-awney/)
 Research Gate : <https://www.researchgate.net/profile/Saleh-El-Awney>
 (https://www.researchgate.net/profile/Saleh-El-Awney)

Dr. Yongwei shan

Associate Professor, Construction Engineering & Project Management, Oklahoma State University, **United States of America**

Email	: yongwei.shan@okstate.edu (mailto:yongwei.shan@okstate.edu)
institutional Profile	: https://ceat.okstate.edu/cive/faculty-staff/yongwei-shan.html (https://ceat.okstate.edu/cive/faculty-staff/yongwei-shan.html)
Google Scholar	: https://scholar.google.com/citations?user=vhAh2p8AAAAJ&hl=en (https://scholar.google.com/citations?user=vhAh2p8AAAAJ&hl=en)
ORCID	: https://orcid.org/0000-0001-5918-042X (https://orcid.org/0000-0001-5918-042X)

Dr. Najm alghazali

Professor, Department of Civil Engineering, College of Engineering, University of Babylon, **IRAQ**

Email	: drnajm59@gmail.com , dr.nalghazali@gmail.com (mailto:drnajm59@gmail.com, dr.nalghazali@gmail.com)
Institutional Profile	: https://livedna.net/?dna=964.11320 (https://livedna.net/?dna=964.11320)
Google Scholar	: https://scholar.google.com/citations?user=TUnjQjAAAAAJ&hl=en (https://scholar.google.com/citations?user=TUnjQjAAAAAJ&hl=en)
Research Gate	: https://www.researchgate.net/profile/Dr-Najm-Alghazali (https://www.researchgate.net/profile/Dr-Najm-Alghazali)

Dr. Mohsen Sherif

Professor, Civil Engineering Department, College of Engineering, United Arab Emirates University, **UAE**

Email	: msherif@uaeu.ac.ae (mailto:msherif@uaeu.ac.ae) https://eng.uaeu.ac.ae/en/departments/civil/profile.shtml?email=msherif@uaeu.ac.ae
Institutional Profile	: https://eng.uaeu.ac.ae/en/departments/civil/profile.shtml?email=msherif@uaeu.ac.ae
Google Scholar	: https://scholar.google.co.in/citations?user=Vau-UilAAAAJ&hl=en&oi=sra (https://scholar.google.co.in/citations?user=Vau-UilAAAAJ&hl=en&oi=sra)
ORCID	: https://orcid.org/0000-0002-6368-8143 (https://orcid.org/0000-0002-6368-8143)
Research Gate	: https://www.researchgate.net/profile/Mohsen-Sherif (https://www.researchgate.net/profile/Mohsen-Sherif)

Dr. Islam Ezz El-Arab

Professor in Structural Engineering Department, Faculty of Engineering, Tanta University, Egypt

Email	: islamezzelarb@yahoo.com, slam.elarab@f-eng.tanta.edu.eg (mailto:islamezzelarb@yahoo.com, slam.elarab@f-eng.tanta.edu.eg)
Institutional Profile	: http://tdb2.tanta.edu.eg/staff/islam.elarab (http://tdb2.tanta.edu.eg/staff/islam.elarab)
Google Scholar	: https://scholar.google.com.eg/citations?user=qXZapdAAAAAJ&hl=en (https://scholar.google.com.eg/citations?user=qXZapdAAAAAJ&hl=en)
ORCID	: https://orcid.org/0000-0003-3293-1857 (https://orcid.org/0000-0003-3293-1857)
Publon	: https://publons.com/researcher/1727130/islam-ezz-el-arab/ (https://publons.com/researcher/1727130/islam-ezz-el-arab/)
Research Gate	: https://www.researchgate.net/profile/Islam-Ezz-El-Arab (https://www.researchgate.net/profile/Islam-Ezz-El-Arab)

Dr. Marcello RUBERTI

Professor, Department of Economic Sciences, University of Salento, Lecce, **Italy**

Email	: marcello.ruberti@unisalento.it (mailto:marcello.ruberti@unisalento.it)
Institutional Profile	: https://www.unisalento.it/scheda-utente/-/people/marcello.ruberti (https://www.unisalento.it/scheda-utente/-/people/marcello.ruberti)
Google Scholar	: https://scholar.google.com/citations?user=nWVSLmYAAAAAJ&hl=en (https://scholar.google.com/citations?user=nWVSLmYAAAAAJ&hl=en)
ORCID	: https://orcid.org/0000-0002-0764-3303 (https://orcid.org/0000-0002-0764-3303)
Publon	: https://publons.com/researcher/AAA-5066-2021/ (https://publons.com/researcher/AAA-5066-2021/)
Research Gate	: https://www.researchgate.net/profile/Marcello-Ruberti-2 (https://www.researchgate.net/profile/Marcello-Ruberti-2)

Dr. Pathmakumara Jayasingha

Senior Lecturer, Department of Geography, University of Colombo, Sri Lanka

Email	: jpathma@geo.cmb.ac.lk (mailto:jpathma@geo.cmb.ac.lk)
Institutional Profile	: https://res.cmb.ac.lk/geography/pathmakumara.jayasingha/ (https://res.cmb.ac.lk/geography/pathmakumara.jayasingha/)
Google Scholar	: https://scholar.google.com/citations?user=kFKOn5IAAAAJ&hl=en (https://scholar.google.com/citations?user=kFKOn5IAAAAJ&hl=en)
Research Gate	: https://www.researchgate.net/profile/Pathmakumara-Jayasingha-2 (https://www.researchgate.net/profile/Pathmakumara-Jayasingha-2)

Dr. Mohammad Arif Kamal

Associate Professor, Architecture Section, Aligarh Muslim University, India

Email	: architectarif@gmail.com (mailto:architectarif@gmail.com)
Institutional Profile	: https://www.amu.ac.in/faculty/architecture-section/mohammad-arif-kamal (https://www.amu.ac.in/faculty/architecture-section/mohammad-arif-kamal)
Google Scholar	: https://scholar.google.com/citations?user=fdV0F4QAAAAAJ&hl=en (https://scholar.google.com/citations?user=fdV0F4QAAAAAJ&hl=en)
ORCID	: https://orcid.org/0000-0001-8302-8794 (https://orcid.org/0000-0001-8302-8794)
Publon	: https://publons.com/researcher/AAY-5589-2020/ (https://publons.com/researcher/AAY-5589-2020/)



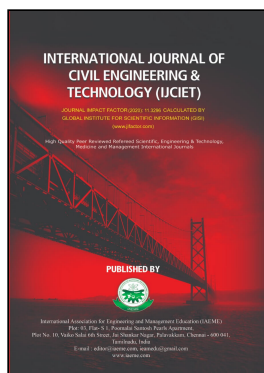
Search



(https://iaeme.com/Page/open_access) Scopus Indexed
Journals (https://iaeme.com/Page/scopus_indexed)

24041 Articles From 118 Journals

Home > INTERNATIONAL JOURNAL OF CIVIL ENGINEERING AND TECHNOLOGY (IJCIET)



IJCIET

INTERNATIONAL JOURNAL OF CIVIL ENGINEERING AND TECHNOLOGY (IJCIET)

ISSN Print: 0976-6308

ISSN Online: 0976-6316

Website: <https://iaeme.com/Home/journal/IJCIET> (<https://iaeme.com/Home/journal/IJCIET>)

Email: editor@iaeme.com (<mailto:editor@iaeme.com>) , iaemedu@gmail.com (<mailto:iaemedu@gmail.com>)

Articles Published: 6357

2022 (<https://iaeme.com/Home/issue/IJCIET?Volume=13&Issue=1>)

2021 (<https://iaeme.com/Home/issue/IJCIET?Volume=12&Issue=12>)

2020 (<https://iaeme.com/Home/issue/IJCIET?Volume=11&Issue=12>)

2019 (<https://iaeme.com/Home/issue/IJCIET?Volume=10&Issue=12>)

2018 (<https://iaeme.com/Home/issue/IJCIET?Volume=9&Issue=13>)

2017 (<https://iaeme.com/Home/issue/IJCIET?Volume=8&Issue=12>)

2016 (<https://iaeme.com/Home/issue/IJCIET?Volume=7&Issue=6>)

2015 (<https://iaeme.com/Home/issue/IJCIET?Volume=6&Issue=12>)

2014 (<https://iaeme.com/Home/issue/IJCIET?Volume=5&Issue=12>)

2013 (<https://iaeme.com/Home/issue/IJCIET?Volume=4&Issue=6>)

2012 (<https://iaeme.com/Home/issue/IJCIET?Volume=3&Issue=2>)

2011 (<https://iaeme.com/Home/issue/IJCIET?Volume=2&Issue=2>)

2010 (<https://iaeme.com/Home/issue/IJCIET?Volume=1&Issue=1>)

2017 » 12 (<https://iaeme.com/Home/issue/IJCIET?Volume=8&Issue=12>)

11 (<https://iaeme.com/Home/issue/IJCIET?Volume=8&Issue=11>)

10 (<https://iaeme.com/Home/issue/IJCIET?Volume=8&Issue=10>)

9 (<https://iaeme.com/Home/issue/IJCIET?Volume=8&Issue=9>)

8 (<https://iaeme.com/Home/issue/IJCIET?Volume=8&Issue=8>)

7 (<https://iaeme.com/Home/issue/IJCIET?Volume=8&Issue=7>)

6 (<https://iaeme.com/Home/issue/IJCIET?Volume=8&Issue=6>)

5 (<https://iaeme.com/Home/issue/IJCIET?Volume=8&Issue=5>)

4 (<https://iaeme.com/Home/issue/IJCIET?Volume=8&Issue=4>)

3 (<https://iaeme.com/Home/issue/IJCIET?Volume=8&Issue=3>)

2 (<https://iaeme.com/Home/issue/IJCIET?Volume=8&Issue=2>)

1 (<https://iaeme.com/Home/issue/IJCIET?Volume=8&Issue=1>)

Volume 8, Issue 8, August 2017 , Articles Published : 191

Cover Page, Table of Contents and Others: PDF

(https://iaeme.com/uploads/CONTENTS2021_05_24_17_52_23.pdf)

1 . REVIEW ON E-RESOURCES IN CIVIL ENGINEERING DEPARTMENTAL LIBRARIES

(https://iaeme.com/Home/article_id/IJCIET_08_08_001)

T. Venkata Rao (https://iaeme.com/Home/author_details/1896)

38 . THE ROLE OF TREE ROOT FOR INCREASING INFILTRATION CAPACITY**(https://iaeme.com/Home/article_id/IJCIET_08_08_038)**

A. Rakhim (https://iaeme.com/Home/author_details/38886) ; A. Munir
 (https://iaeme.com/Home/author_details/38887) ; M. A. Thaha
 (https://iaeme.com/Home/author_details/38888) ; F. Maricar
 (https://iaeme.com/Home/author_details/38889)

Article Id : IJCIET_08_08_038 (https://iaeme.com/Home/article_id/IJCIET_08_08_038), Pages : 379-388

INTERNATIONAL JOURNAL OF CIVIL ENGINEERING AND TECHNOLOGY (IJCIET),
 (<https://iaeme.com/Home/journal/IJCIET>) Volume 8, Issue 8, August 2017

Published On : August 19,2017

42 Downloads 113 Views Citation

39 . STRENGTH ANALYSIS OF CORN COB ASH AND KENAF FIBRE COMPOSITES**(https://iaeme.com/Home/article_id/IJCIET_08_08_039)**

Festus Adeyemi OLUTOGE (https://iaeme.com/Home/author_details/38902) ; Olufunmilola Adetayo
 OBAKIN (https://iaeme.com/Home/author_details/38903)

Article Id : IJCIET_08_08_039 (https://iaeme.com/Home/article_id/IJCIET_08_08_039), Pages : 389-397

INTERNATIONAL JOURNAL OF CIVIL ENGINEERING AND TECHNOLOGY (IJCIET),
 (<https://iaeme.com/Home/journal/IJCIET>) Volume 8, Issue 8, August 2017

Published On : August 19,2017

22 Downloads 69 Views Citation

40 . TORSIONAL BUCKLING RESPONSE OF OPEN CROSS SECTION STRUCTURES LYING ON WINKLER-PASTERNAK SOIL VIA DYNAMIC MATRIX METHOD (https://iaeme.com/Home/article_id/IJCIET_08_08_040)

Sai Kumar Aniseti (https://iaeme.com/Home/author_details/38909)

Article Id : IJCIET_08_08_040 (https://iaeme.com/Home/article_id/IJCIET_08_08_040), Pages : 398-407

INTERNATIONAL JOURNAL OF CIVIL ENGINEERING AND TECHNOLOGY (IJCIET),
 (<https://iaeme.com/Home/journal/IJCIET>) Volume 8, Issue 8, August 2017

Published On : August 19,2017

14 Downloads 45 Views Citation

41 . NUMERICAL INVESTIGATION OF THE BUCKLING STRENGTH BEHAVIOR OF RING STIFFENED SUBMARINE PRESSURE HULL (https://iaeme.com/Home/article_id/IJCIET_08_08_041)

Hartono Yudo (https://iaeme.com/Home/author_details/38942) ; Aulia Windyandari
 (https://iaeme.com/Home/author_details/76727) ; Ahmad Fauzan Zakki
 (https://iaeme.com/Home/author_details/35234)

Article Id : IJCIET_08_08_041 (https://iaeme.com/Home/article_id/IJCIET_08_08_041), Pages : 408-415

INTERNATIONAL JOURNAL OF CIVIL ENGINEERING AND TECHNOLOGY (IJCIET),
 (<https://iaeme.com/Home/journal/IJCIET>) Volume 8, Issue 8, August 2017

INTERNATIONAL JOURNAL OF CIVIL ENGINEERING AND TECHNOLOGY (IJCIET),
(<https://iaeme.com/Home/journal/IJCIET>)Volume.8, Issue.8, August 2017

Published On : August 19,2017

18 Downloads 41 Views Citation

84 . DISCOMFORT DUE TO WORK ENVIRONMENT AND SAFETY FACTORS AMONG WORKERS IN FOUNDRY INDUSTRY (https://iaeme.com/Home/article_id/IJCIET_08_08_084)

A. Shanmuganathan (https://iaeme.com/Home/author_details/79226) ; N. M. Sivaram
(https://iaeme.com/Home/author_details/79227) ; P. Shanmughasundaram
(https://iaeme.com/Home/author_details/79228)

Article Id : IJCIET_08_08_084 (https://iaeme.com/Home/article_id/IJCIET_08_08_084), Pages : 820-826

INTERNATIONAL JOURNAL OF CIVIL ENGINEERING AND TECHNOLOGY (IJCIET),
(<https://iaeme.com/Home/journal/IJCIET>)Volume.8, Issue.8, August 2017

Published On : August 21,2017

6 Downloads 28 Views Citation

85 . REINFORCED AER-TECH NOVEL MATERIAL A STRUCTURALLY EFFECTIVE MATERIAL (https://iaeme.com/Home/article_id/IJCIET_08_08_085)

F.G. Dan-Jumbo (https://iaeme.com/Home/author_details/19258) ; M. Saidani
(https://iaeme.com/Home/author_details/39903) ; S. George
(https://iaeme.com/Home/author_details/19260)

Article Id : IJCIET_08_08_085 (https://iaeme.com/Home/article_id/IJCIET_08_08_085), Pages : 827-832

INTERNATIONAL JOURNAL OF CIVIL ENGINEERING AND TECHNOLOGY (IJCIET),
(<https://iaeme.com/Home/journal/IJCIET>)Volume.8, Issue.8, August 2017

Published On : August 21,2017

9 Downloads 34 Views Citation

86 . TANGENTIAL STRESS FACTOR COMPUTATION IN POINT MOUNTED STRUCTURAL GLASS (https://iaeme.com/Home/article_id/IJCIET_08_08_086)

B. Venkatesh (https://iaeme.com/Home/author_details/39926) ; Gowtham Reddy G
(https://iaeme.com/Home/author_details/39927) ; Benjamin Rohit
(https://iaeme.com/Home/author_details/39928) ; Syed Sharin
(https://iaeme.com/Home/author_details/79560)

Article Id : IJCIET_08_08_086 (https://iaeme.com/Home/article_id/IJCIET_08_08_086), Pages : 833-840

INTERNATIONAL JOURNAL OF CIVIL ENGINEERING AND TECHNOLOGY (IJCIET),
(<https://iaeme.com/Home/journal/IJCIET>)Volume.8, Issue.8, August 2017

Published On : August 19,2017

9 Downloads 33 Views Citation

87 . SECURITY FOR WIRELESS LOCAL AREA NETWORK WITH PRE SHARE KEY AUTHENTICATION USING WI-FI PROTECTED ACCESS (https://iaeme.com/Home/article_id/IJCIET_08_08_087)



NUMERICAL INVESTIGATION OF THE BUCKLING STRENGTH BEHAVIOR OF RING STIFFENED SUBMARINE PRESSURE HULL

Hartono Yudo

Naval Architecture Department, Engineering Faculty,
Diponegoro University, Semarang, 50275, Indonesia

Aulia Windyandari

Vocational Programs of Naval Architecture Department, Engineering Faculty,
Diponegoro University, Semarang, 50275, Indonesia

Ahmad Fauzan Zakki

Naval Architecture Department, Engineering Faculty,
Diponegoro University, Semarang, 50275, Indonesia

ABSTRACT

A growing trend in the design of the submarine proves the need for increasing the level of water depth, especially for the military activities. Moreover, the complexity of modern submarines and their demand for efficiency, safety, and greater reliability, is a challenge for designers in making the design of submarine particular component known as pressure hull. The pressure hull is the main load-bearing structure in a naval submarine. The basic structural component is a ring-stiffened cylindrical metallic shell under an external hydrostatic pressure load. The ring-stiffeners forestall buckling of the shell until the material exhibits yielding, thereby taking advantage of the full material strength and increasing the structural efficiency. The aim of the paper is to investigate the buckling strength behavior of ring stiffened submarine pressure hull. The influence of the bulkhead positions on the buckling strength behavior of the ring stiffened submarine pressure hull are presented and discussed.

Key words: Ring Stiffened Structure, Buckling Strength Behavior, and Submarine Pressure Hull.

Cite this Article: Hartono Yudo, Aulia Windyandari and Ahmad Fauzan Zakki, Numerical Investigation of the Buckling Strength Behavior of Ring Stiffened Submarine Pressure Hull. International Journal of Civil Engineering and Technology, 8(8), 2017, pp. 408–415.

<http://iaeme.com/Home/issue/IJCET?Volume=8&Issue=8>



STRENGTH ANALYSIS OF CORN COB ASH AND KENAF FIBRE COMPOSITES

Festus Adeyemi OLUTOGE and Olufunmilola Adetayo OBAKIN

Department of Civil Engineering, Faculty of Technology,
University of Ibadan, **Nigeria**

ABSTRACT

The effects of corn cob ash (CCA), a pozzolan and kenaf fibre (KF) a natural plant fibre on the compressive strength properties of cement composites were investigated in this study. Ordinary Portland cement (OPC) replaced with CCA at different proportions and the KF reinforced composites derived were used to produce roofing sheets. Concrete cubes specimen of $100 \times 100 \times 100 \text{ mm}^3$ were used for mechanical properties consideration in this work. The composite without KF and CCA replacement for OPC were used as the control and OPC with CCA replacement of 5%, 10%, 15%, and 20% were tested for compressive strength characteristics at 7, 14, 21 and 28 days curing time. The mix ratio adopted for this work was 1:3, a table vibrator was used while the quarry dust used allowed water/cement ratio of 0.6 to attain workability. The control (0% CCA and 0% KF) experiments have lower compressive strength values that increased from 7 to 28 curing days than those which contained KF and CCA replacement for OPC at 5%. The compressive strength was found to increase with curing age from 7-28 days while the result showed decreased strength as the CCA increased from 15-20% in the matrix. MatLab R2013 model was used to analyse the compressive strength results from experimental investigations carried out. The results of the effect of CCA on compressive strength at 0, 5, 10, 15 and 20% CCA replacement of Portland Cement and 0% KF ranged from 5.19 to 8.25 N/mm^2 , 7.68 to 9.97 N/mm^2 , 8.56 to 12.34 N/mm^2 , 4.06 to 7.24 N/mm^2 , 4.07 to 7.21 N/mm^2 . The maximum value ($12.42 \pm 0.6 \text{ N/mm}^2$) of compressive strength was obtained at 5% CCA contents with 7.5% KF. The effect of CCA on the compressive strengths was significant at $P > 0.05$ both in row and column of the matrix language adopted in MatLab analysis of variance (ANOVA).

Key words: Compressive strength, Corn Cob Ash, Kenaf Fibre, Pozzolan, composites, mix ratio.

Cite this Article: Festus Adeyemi OLUTOGE and Olufunmilola Adetayo OBAKIN, Strength Analysis of Corn Cob Ash and Kenaf Fibre Composites. International Journal of Civil Engineering and Technology, 8(8), 2017, pp. 389–397.
<http://iaeme.com/Home/issue/IJCET?Volume=8&Issue=8>



REINFORCED AER-TECH NOVEL MATERIAL A STRUCTURALLY EFFECTIVE MATERIAL

F.G. Dan-Jumbo, M. Saidani and S. George

Faculty of Engineering and Computing, Department of Built Environment,
Coventry University, Priory Street, Coventry CV1 5FB, **United Kingdom**

ABSTRACT

The Aer-Tech material was initially envisaged as a void filling and fireproofing material, but recent research findings has shown great structural potential. The structural effect of Aer-Tech material conforms with the analogy as stated in (Moseley, Hulse and Bungey.1999) that areas of tension on a reinforced Aer-Tech material are prone to undergo cracking. Ultimately, the ductility of reinforced Aer-Tech beam is primarily important in justifying structural capability of the material. Since, from structural standard it is paramount for a ductile structural material to undergo large deflection at near maximum load carrying capacity, by providing ample warnings to an impending failure. This paper had shown clearly that Aer-Tech material displacement ductility ratio taken in terms of $\mu = \Delta_u/\Delta_y$, which is the ratio of ultimate moment to first yield deflection. Where Δ_u is the deflection at ultimate moment and Δ_y is the deflection when the steel yield. In general, high ductility ratios confirm that structural member is capable of undergoing large deflection prior to failure. Consequently, the result of this investigation on Aer-Tech reinforced beam ductility, shows that Aer-Tech material possess relatively good ductile characteristics as beam shows clear signs of cracks on beam long before failure. Other results of Aer- Tech material stress and strain behaviour had further confirm Aer-Tech material as a structural effective material comparable to conventional concrete since the ultimate experimental failure load of Aer-Tech material is 38.7 KN, whilst the theoretical calculated ultimate load is 35 KN. The nearness of experimental and theoretical failure load confirms structural capability of Aer-Tech material.

Key words: Investigating, Deflection, Material, Structural, Lightweight, Aer-Tech Material.

Cite this Article: F.G. Dan-Jumbo, M. Saidani and S. George. Reinforced Aer-Tech Novel Material A Structurally Effective Material, International Journal of Civil Engineering and Technology, 8(8), 2017, pp. 827–832.
<http://iaeme.com/Home/issue/IJCET?Volume=8&Issue=8>