Reference and Bibliography Database on
Research and Development with
Pultruded Fibre Reinforced Polymer Shapes and Systems

Compiler: Professor J. Toby Mottram email: J.T.Mottram@warwick.ac.uk
Address: School of Engineering, University of Warwick, Coventry, CV4 7AL, UK.

Date: 01/01/19 Pages: 189 Entries: 2629

This publication database is for publications on research and development towards the application of pultruded Fibre Reinforced Polymer (PFRP) shapes and systems in civil engineering works. Details of papers in a conference proceeding may be incomplete. The database does not include publications for retrofitting and repair, rebars or dowels in reinforced concrete and process engineering.

References in the 13 categories are listed in alphabetical order by first author’s surname and then year of publication.

Every effort is made to accurately record a publication’s details so that you can obtain a copy. The compiler cannot be responsible for any errors in the listings.

Information for new publications or/and revisions shall be gratefully received, and the database will be updated for the next month.

MAGAZINE, BOOKS, REVIEW AND APPLICATION ARTICLES


6. Anon., ‘Fiberglass spire high point on Atlanta skyline,’ FRP Inter., 1 1, 1993, 7.


17. Anon., 'Fibreforce expands pultruded profile range', J. British Corrosion, 32 1, 1997, 11. (news item)
27. Anon,' Schulyer Heim lift bridge to get composite demonstration deck panels by end of year,' Advanced Materials and Composites News (USA), 22 18, 2000, 5-6.
31. Anon., 'Pultrusion market needs a better strategy,' Materials World, 13 2, 7-7 Dec 2005.


66. Busel, J., 'State of the North American pultrusion industry – An examination of the the pultrusion industry, plus update on the LRFD design standard,' Composite Manufacturing, April, 2008, 28-54. (not every page)


76. Daniel R.A. Nagtegaal G., 'Pedestrian bridge of pultruded sections as result of ecological design,' in Proc. EPTA Seminar, EPTA, 2001, p ?.


87. Faber Maunsell. FRP footbridge in place. Reinforced Plastics, 47 (No. 6), 2003, 9.


109. Head, P.R., ‘The world’s first advanced composite road bridge,’ in Proc. Advanced Composite Materials in Bridges and Structures (ACMBS/1-MCAPC/1), Montreal, The Canadian Society for Civil Engineers, 1992. ??


112. Head, P.R., ‘High performance structural materials: Advanced composites,’ in Proc. IABSE Colloquium on Remaining Structural Capacity, Copenhagen, 1996. ??

113. Head, P.R., ‘Advanced composites in civil engineering – A critical overview at this high interest, low stage of development,’ in Proc. Fiber Composites in Infrastructure, 2nd Inter. Conf. on Composites in Infrastructure (ICCI’98), University of Turzon, AZ, Vol. 1, 3-15.


133. Kaempen, C.E., ‘Building and transportation systems that provide a new growth market for structural composites,’ in Proc. 37th Inter. SAMPE Symposium, SAMPE, 1992, ??.


151. Lass, H., ‘At last, pultrusion may be ready for the big time,’ Chemical Week, April 1989, 34-35.


206. Ryszard D.A., 'Construction material for a bridge with regard to the environment,' Bautechnik, 80 1, 2003, 32-42.


JOURNALS, NEWSLETTERS AND MAGAZINES


243. J. Composites for Construction, American Society of Civil Engineers, Reston, four issues per year.

244. Composite Design and Applications - The Source for Solutions and Technology. USA.


246. Loud, S., (Ed.), Composites News: Infrastructure, Composites News Inter., Solana Beach, California, USA.


248. ‘Profile’, Quarterly Newsletter from Strongwell Corporation, USA.

MATERIAL CHARACTERISATION


375. Grammatikos, S.A., Ball, R.J., Evernden, M. and Jones, R.G., ‘Impedance spectroscopy as a tool for moisture uptake monitoring in construction composites during service,’ Composites Part


397. Helbling, C. and Karbhari, V.M., ‘Durability assessment of combined environmental exposure and bending, in Proc. 7th Inter. Symposium on Fiber-Reinforced (FRP) Polymer Reinforcement for Concrete Structures, SP-230-79, 2005, 1397-


438. Lackey, E, 'Iosipescu shear testing and combined loading compression (CLC) testing of pultruded composites,' Final Report ASTM D 5379-93 and ASTMD 6641-01, University of Mississippi, Oxford, MS, USA.


443. Li, C.G., Xian, G.J. and Li, H. ‘Water absorption and distribution in a pultruded unidirectional carbon/glass hybrid rod under hydraulic pressure and elevated temperatures,’ Polymer, 10 6, 2008, Article No. 627. doi: 10.3390/polym10060627


482. Park, J.Y. and Zureick, A.H. 'Effect of filler and void content on mechanical properties of pultruded composite materials under shear loading,' Polymer Composites, 26 2, 2005, 181-192.

483. Park, J.Y., ‘Effect of nanofillers and void to the shear properties of pultruded composites,’ in Proc. of Composites and Polycon 2006, ACMA, St. Lois, MO, 2006. ??


511. Russo, S., Ghadimi, B., Lawania, K., Rosano, M., ‘Residual strength testing in pultruded frp material under a variety of temperature cycles and values,’ Composite Structures, 133, 2015, 458-475. doi: http://dx.doi.org/10.1016/j.compstruct.2015.07.034


Chapter 5 by O. Gunes, Cankaya University, Turkey - Failure modes in structural applications of fiber-reinforced polymer (FRP) composites and their prevention

Chapter 7 by S. Moy, University of Southampton, UK - Advanced fiber-reinforced polymer (FRP) composites for civil engineering applications

Chapter 13 by N. Uddin, A.M. Abro, J.D. Purdue and U. Vaidya, The University of Alabama at Birmingham, USA - Thermoplastic composites for bridge structures

Chapter 16 by R. Liang and G. Hota, West Virginia University, USA - Fiber-reinforced polymer (FRP) composites in environmental engineering applications


562. Van de Velde, K. and Kiekens, P., ‘Chemical resistance of pultruded E-glass reinforced polyester composites,’ in Proc. 4th Inter. Conf. on Durability Analysis of Composite Systems


598. Zureick, A., Beghaus, D., Park, J. and Cho, B., ‘Shear properties of pultruded composite materials,’ SEM 97-2, School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA, 1997, USA.


**STRUCTURAL HEALTH MONITORING AND NON-DESTRUCTIVE TESTING**


**ELEMENT BEHAVIOUR**


646. Aghaei, M., Forouzan, M.R., and Ahmadi, E., ‘Predicting the buckling behavior of pultruded beams under axial static compression,’ Iranian J. of Science and Technology of Science and technology of mechanical Engineering, 40 2, 2016, 125-129. DOI: 10.1007/s40997-016-0001-0


666. Åström, B. T., Hallström, S. and Knudsen, E., ‘Mechanical properties of pultruded triaxially reinforced composites,’ in Proc. 6\textsuperscript{th} Inter. Conf. on Flow Processes in Composite Materials, Aukland, New Zealand, 4-5 Feb, 2002. ??


Barbero, E.J., ‘Prediction of the interaction constant for the analysis of composite columns,’ in Proc. 3rd Inter. Conf. on Advanced Composite Materials in Bridges and Structures, The Canadian Society for Civil Engineers (CSCE), 2000, 331-338.


863. Hollaway, L and Lee, J., ‘Discussion of the paper ‘Short- and long-term structural properties of pultruded beam assemblies fabricated using adhesive bonding’ Composite Structures, 28 1, 1994, 121

865. Insausti, A., 'A design method for concentrically loaded FRP columns following the Eurocode,' in Proc. 8th Inter. Conf. on Composite Materials (Advancing with Composites 2005), AMME-ASMECCANICA, Università di Napoli, 2005, pg 1-7.


870. Johnson, A.F., ‘Simplified buckling analysis for RP beams and columns,’ in Proc. 1st European Conf. on Composite Materials (ECCM/1), Bordeaux, 1985, 541-549. ??


902. Lane, A. and Mottram, J.T., ‘The influence of mode interaction upon the buckling of concentrically loaded wide-flange pultruded columns,’ in Proc. 3rd Inter. Conf. on Advanced Composite Materials in Bridges and Structures, The Canadian Society for Civil Engineers (CSCE), 2000, 463-470.


904. Laudiero, F., Minghini, F., Ponara, N. and Tullini, N., ‘Buckling resistance of pultruded FRP profiles under pure compression or uniform bending-numerical simulation,’ in Proc. 6th Inter. Conf. on FRP Composites in Civil Engineering (CICE 2012), Rome, Section 8: All-FRP and Smart FRP Structures, Paper 085, 2012, pp. 8.


920. Lopez-Anido, R., Open-hole tensile strength for pultruded plates”, report to ASCE Fiber Composites and Plastics Committee, University of Maine, 2009. (not in public domain)


955. Nagaraj, V. and GangaRao, H.V.S., ‘Static and fatigue response of pultruded FRP beams without and with splice connections,’ Research Report No. CFC 94-184, to NSF and WVDOT, West Virginia Univ., Morgantown, WV, USA,


975. OToole, B.J. and Tong, Q., ‘Effect of lay-up, core material, and cross-sectional geometry on the structural performance of pultruded fiberglass utility poles,’ J. Reinforced Plastics and Composites, 15 7, 1996, 692-700.


984. Park, J. Y. and Lee, J. W., ‘Determination of shear buckling load of a comparably large pultruded polymer composite I-Section by asymmetric loading,’ in Proc. 24th CANCAM, Saskatoon, Saskatchewan, Canada, 2013. ??


1031. Russo, S., A review on buckling collapse of simple and complex columns made from pultruded FRP material, 8 1, 2017, 1-34. doi: 10.1615/CompMech ComputApplIntJ.v8.i1.10


1042. Seangatith, S., ‘Structural behavior of concentrically loaded GFRP angle columns,’ in Proc. 7th Inter. Conf. on Composite Engineering (ICCE/7), University of Colorado, 2000, 781-782.


1048. Seangatith, S., 'Structural behaviors of concentrically loaded GFRP angle columns,' in Proc. 7th Inter. Conf. on Composite Engineering, Denver, Colorado, USA, July 2-8, 2000, 781-782.


1070. Sirjani, M.B. and Razzaq, Z., ‘Stability and LRFD approach for FRP channel beams under three-point loading,’ in Proc. 7th Inter. Conf. on Composite Engineering (ICCE/7), University of Colorado, 2000, 737-738.


1090. Teh, K. and Huang, C., ‘Shear deformation coefficient for generally orthotropic beams,’ Fiber Science and Technology, 1979, 12, 73-80.


1103. Turvey, G.J. and Brooks, R.J., ‘Lateral buckling tests on pultruded GRP I-sections beams with simply supported-simply and clamped-simply supported end conditions,’ in Proc. 1st Inter. Conf. on Composites in Infrastructure (ICCI’96), University of Arizona, Tucson, 1996. 651-664.


1140. Wong, P.M.H., 'Performance of GRP composite structures at ambient and elevated temperatures,' The Structural Engineer, 81 15, 2003, 10 & 12.


1142. Wong, P.M.H. and Wang, Y.C., An experimental study of pultruded glass fibre reinforced plastics channel columns at elevated temperatures,' Composite Structures, 81 1, 2007, 84-95.


1155. Yuan, R.L. and Hashen, Z., ‘The effect of end support conditions on the behavior of GFRP composite columns,’ in Proc. 1st Inter. Conf. on Composites in Infrastructure (ICCI’96), University of Arizona, 1996, 621-627.


CONNECTIONS AND JOINTS


1319. Matharu, N.S. and Mottram, J.T., ‘Laterally unrestrained bolt bearing strength: Plain pin and threaded values,’ in Proc. 6th Inter. Conf. on FRP Composites in Civil Engineering (CICE 2012), Rome, Section 14: Codes and Design Guidelines, Paper 311, 2012, pp. 8 (CD-Rom)


1322. Mcgrath G.C., ‘Aspects of joining pultrusions,’ http://www.pultron.co.nz/technical.htm (and via technical papers) 21/12/05


1370. Mottram, J.T., ‘Determination of pin-bearing strength for the design of bolted connections with standard pultruded profiles,’ in Proc. 4th Inter. Conf. on Advanced Composites in Construction (ACIC 2009), NetComposites Ltd, Chesterfield, 2009, 483-495.


1391. Peirick L. and Dawood, M., ‘Behavior of bolted and bonded simple shear connections for structural GFRP sandwich panels,’ in Proc. 6th Inter. Conf. on FRP Composites in Civil Engineering (CICE 2012), Rome, Section 8: All-FRP and Smart FRP Structures, Paper 357, 2012, pp. 9.


1414. Rietz, A., ‘Failure of bolt connection in fiber reinforced plastic component exposed to bending torque,’ Engineering Failure Analysis, 84, 2018, 109-120.


1462. Turvey, G.J. and Cooper, C., ‘Characterization of the short term static moment-rotation responses of bolted connections between pultruded GRP beams and column WF-sections,’ in Proc. 2nd Inter. Conf. on Advanced Composite Materials in Bridges and Structures, Montreal (ACMBS/2), The Canadian Society for Civil Engineers (CSCE), Montreal, 1996, 927-934.


1537. Zafari, B., Qureshi, J. Mottram, J. T. and Rusev, R. 'Static and fatigue performance of resin injected bolts for a slip and fatigue resistant connection in FRP bridge engineering,' Structures, 7, 2016, 71-84. doi: 10.1016/j.istruc.2016.05.004


STRUCTURES AND BRIDGES

1556. ‘Concept development regarding the use of pultruded composite material in the construction of causeway (Phase 1B),’ Contract No. N00167-96-C-0003, Prepared for: Naval Surface


1624. Canning, L., ‘Developments in FRP railway bridge applications,’ in Proc. 6th Inter. Conf. on FRP Composites in Civil Engineering (CICE 2012), Rome, Section 8: All-FRP and Smart FRP Structures, Paper 749, 2012, pp. 10.


1737. Keller, T., and Schollmayer, M., 'In-plane tensile performance of a cellular FRP bridge deck acting as top chord of continuous bridge girders,' Composite Structures, 72 1, 2006, 130-140.


1755. Kim, S.H., Yoon, S.-J. and Choi, W., ‘Design and construction of 1 MW class floating PV generation structural system using FRP members, Energies, 10 8, 2017, Article No.: 1142.


1898. Russo, S., Boscato, G. and Mottram, J.T., ‘Design and free vibration of a large temporary roof FRP structure for the Santa Maria Paganica church in L’Aquila,’ in Proc. 6th Inter. Conf. on FRP Composites in Civil Engineering (CICE 2012), Rome, Section 8: All-FRP and Smart FRP Structures, Paper 209, 2012, pp. 8 (CD-Rom)


2036. Zheng, Y. and Mottram, J.T., ‘Analysis of pultruded frames with semi-rigid connections,’ in Proc. 2nd Inter. Conf. on Advanced Composite Materials in Bridges and Structures (ACMBS/2), The Canadian Society for Civil Engineers (CSCE), 1996, 919-927.


**OTHER TECHNICAL ASPECTS (INCLUDING DURABILITY AND FIRE PERFORMANCE)**


2142. Russo, S., 'Shear and local effects in all-FRP bolted built-up columns,' Advances in Structural Engineering, 18 8, 2015, 1227-1240.


2152. Turvey, G.J. and Slater, R.C., ‘Tests on pultruded GRP posts for handrail/barrier structures,’ in Proc. 1st Advanced Composite Materials in Bridges and Structures (ACMB/1), Canada Society for Civil Engineers (CSCE), 1992, 319-329.


DESIGN MANUALS AND ASSOCIATED MATERIAL


2192. CTI. ‘CTI fastener material guidelines - FMG-144 (94),’ Cooling Technology Institute, Houston, July 1994.


2194. CTI ‘Structural Design of FRP Components - STD-152 (02),’ Cooling Technology Institute, Houston, July 2002.

2195. Dutta, P.K., ‘Fatigue of composite bridge decks under extreme temperatures,’ in Proc. 7th Inter. Conf. on Composite Engineering (ICCE/7), University of Colorado, 2000, 755-756.


2199. Evans, D.J., ‘Classifying pultruded products by glass loading,’ in Proc. 41st Annual Conf. SPI, Composite Institute, SPI, 1968, Session 06-E.


2216. Lesko, J.J. and Cousins, T.E., 'EXTREN DWB® design guide - 8” x 6” EXTREN DWB® hybrid and all-glass materials configuration and 36”x18” EXTREN DWB® hybrid material configuration,' Strongwell Cop., 2003.


2228. Nishizaki, I., Kishima, T., and Sasaki, I., ‘Consideration on safety factors of pultruded FRP as bridge structural materials, in Proc. 54th Annual Conf. of Japan Society of Civil Engineers (A), September 1999, 20-21.


Report. No 03-02, School of Civil and Environmental Engineering, Georgia Institute of Technology, Georgia, Atlanta, GA, July 2002, p. 105.


2246. 'Recommended practice for fibre-reinforced polymer products for overhead utility line structures,' ASCE manuals and reports on engineering practice No. 104, ASCE Reston, 2002.

DESIGN GUIDANCE, STANDARDS AND PATENTS


2250. Anonymous. ‘Pre-Standard for Load and Resistance Factor Design (LRFD) of Pultruded Fiber Reinforced Polymer (FRP) structures (Final),' submitted to American Composites Manufacturer Association (ACMA)), American Society of Civil Engineers, 9 November 2010, p. 216. (not in public domain)


2255. ‘Structural design of FRP components,’ CTI Bulletine ESG-152 (13), Cooling Technology Institute, May 2013, p. 15.


report prepared for the Federal Highway Administration by the University of Wisconsin-Madison, 2002.


2284. ‘Standard test method for density and specific gravity (relative density) of plastics by displacement,’ D792-08, ASTM, West Conshohocken, Pa, 2008.


2292. ‘Standard practice for classifying visual defects in thermosetting plastic pultruded shapes,’ D4385-08, ASTM, West Conshohocken, Pa, 2008.


2295. ‘Standard guide for design, fabrication, and erection of fiberglass reinforced chimney liners with coal-fired units,’ D5364-08e1, ASTM, West Conshohocken, Pa, 2008.


CONFERENCE PROC.


2327. Neale, K.W. and Labossiere, P. (Eds.), 1st Advanced Composite Materials in Bridges and Structures (ACMBS/1), Canada Society of Civil Engineers (CSCE), 1992.


2353. COBRAE (Ed.), Bridge Engineering with Polymer Composites Conf. 2005, 30 March - 1 April 2005, Dübendorf (Zurich), Switzerland, COBRAE and EMPA, Leusden, 2005.


2359. Brisk Events (Ed.), 2nd World Pultrusion Conf. in Baltimore, 21-22 May, 2009, USA.


2361. Ye, L., Feng, P. and Yue, Q. (Eds.), Proc. 5th Inter Conf on FRP Composites in Civil Engineering (CICE 2010), 27-29 September 2010, Beijing, China, Vol. 1., FRP for Future Structures, Advances in FRP Composites in Civil Engineering, Tsinghua University Press, 2010.


2365. Whysall, C., and Taylor S. (Eds.), Advanced Composites in Construction 2013 (ACIC 2013), Proc. 6th Inter. Conf. on Advanced Composites in Construction 2013, Queen’s University of Belfast. 10-12 September 2013, NetComposites Ltd., Chesterfield, UK, pp. 409.


THESES


2399. Coleman, J. T., ‘Continuation of field and laboratory tests of a proposed bridge deck panel fabricated from pultruded fiber-reinforced polymer components,’ MS Thesis, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, 2002. 


2439. Jackson, ‘Compression creep of a pultruded E-glass/polyester composite columns at elevated service temperatures,’ MSc thesis, School of Civil Engineering, Georgia Institute of Technology, 2005.


http://vvuscholar.wvu.edu:8881/R/?func=dbin-jump-full&object_id=6827


2464. Liu, X., 'A linear and nonlinear numerical investigation on static behavior of pultruded composite (PERP) portal frame structures,' MS thesis, California State University, Fullerton, USA, 2000. 149 pages


2473. McMahon, A.R., 'Design, construction and testing of a glass reinforced plastic bonded truss frame,' Final Year Project Report, School of Science and Technology, Division of Civil Engrg. and Building, University of Teesside, UK, 1996.


   http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&ved=0CEEQFjAA&url=http%3A%2F%2Fannali.unife.it%2F2008%2F1%2F2%2Farticle%2Fdownload%2F431%2F294&ei=sMMZUrn1FIbO0QWbroGwBw&usg=AFQjCNF7SYo8-04h1pxEoUs3g32SRtg4Bg&bvm=bv.51156542,d.d2k


2497. Park, J.Y., ‘Pultruded composite materials under shear loading,’ PhD Dissertation, Georgia Technology University, USA, 2001. 299 pages


2505. Qureshi, M.A.M. ‘Failure behavior of pultruded GFRP members under combined bending and torsion,’ Dissertation submitted to the Benjamin M. Statler College of Engineering and Mineral Resources at West Virginia University, Morgantown, WV, 2012.


2528. Spencer, S. ‘Mechanical fastened connection for pultruded composite profiles,’ MRes in Advanced Engineering, School of Engineering, Univ. of Warwick, UK, Sept 98.


WEB SITES
2559. Access Design and Engineering http://www.access-design.co.uk/
2560. Ahlstrom Coporation (Glassfibre) www.ahlstrom.com/
2561. American Composites Manufacturers Association (ACMA) www.cfa-hq.org
2562. Anglia Composites Ltd. www.angliacomposites.co.uk
2564. Bakaert Composites http://www.bekaert.com/
2565. The British Plastics Federation http://www.bpf.co.uk/
2566. Captrad, UK http://www.captrad.com/
2567. CTS Bridges, Huddersfield, UK http://www.ctsbridges.co.uk/ https://www.youtube.com/watch?v=CSn8_wNZLcg
2568. Comfort line (door and windows) http://www.comfortlineinc.com/
2569. Composite Construction Laboratory (CCLAB) http://www.cclab.ch/
2570. Composite Cooling Solutions http://compositecooling.com/ (Cooling towers)
2572. Composites UK (trade organization) https://compositesuk.co.uk/ Construction Sector Group
2573. Composites z http://www.compositez.com/
2575. Cooling Technology Institute, Houston http://www.cti.org/
2576. CoSACNet (UK academic Network for Advanced Polymeric Composites for Structural Applications in Construction) http://www.cosacnet.soton.ac.uk/
2578. Deck Industry Association http://www.deckindustry.org/resources.htm
2581. DRB Industries  http://www.drbcoolingtowers.com/pultruded_frp.php
2582. Dura Composites  http://www.duracomposites.com/ high quality flooring and cladding
2583. EPI, fabricator (Texas, USA)  http://engpro.com/
2585. EPTA (European Pultrusion Technology Association)  http://pultruders.org/
2586. Exel Composites (UK)  http://www.fibreglass-engineering-solutions.co.uk/index.htm (was Fibreforce Composites Ltd.)
2587. Firegard Safety Services Ltd, UK.  http://www.firegard.co.uk/
2588. Fibergrate Composite Structures (Fiberglass Gratings and Structural Systems), (USA)  http://www.fibergrate.com/
2589. Fibergrate (Fiberglass Gratings and Fiberglass reinforced plastic products), (UK)  http://www.fibergrate.co.uk/
2590. Fiberline Composites A/S (Denmark)  http://www.fiberline.com/
2592. Fibrolux GMBH (Germany)  http://fibrolux.com/
2593. Genesis Composites (UK)  http://www.genesiscomposites.co.uk/
2595. GDP Koral, s.r.o.  http://www.gdpkoral.cz
2596. IFE Pultrusion Exchange  http://www.fiberglass.com/fiberglass/a/fg5005.html
2597. IIFC (Inter. Institute for FRP in Construction)  http://www.iifc-hq.org/
2598. ISIS Canada  http://www.isiscanada.com/
2602. Lee Composites, Inc.  www.leeocomposites.com
2603. Liberty Pultrusions (West Mifflin, Pa.)  http://www.libertypultrusions.com/
2604. Lionweld Kennedy, fabricator (UK)  [http://www.lk-uk.com/]
2605. Martin Pultrusion Group [http://www.martinpultrusion.com/]
2606. NetComposites (UK) [http://www.netcomposites.com]
2607. Owens Corning Inc.  [http://www.owenscorning.com]
2608. Pipex px, fabricator (UK) [https://www.pipexpx.com/]
2609. Polymec, Madrid, Spain  [http://polymec.com/]
2611. PPG Industries UK Ltd. [http://ppg.com]
2612. Pultrall (Canadian pultruder)  [http://www.pultrall.com/Site2008/index.htm]
2613. Pultrec (UK)  [http://www.pultec.com/]
2614. Pultron Composites [http://www.pultron.com/] (New Zealand)
2615. Pultrusion Industry Council (USA) [http://www.pultrusionindustry.org/]
2616. Psychrometric Systems Inc.  [http://www.psicoolingtowers.com/] FRP cooling towers
2618. Röchling (Germany)  [http://www.roechling-haren.de/]
2620. Seasafe (pultruder)  [http://www.seasafe.com/]
2621. Strongwell  [http://www.strongwell.com]
2622. SXP Cooling technologies  [http://spxcooling.com/]
2624. Tufnol (UK)  [http://www.tufnol.com/]
2625. Universal Pultrusions (door systems for corrosive industrial applications)  (Arizona, USA)  [https://special-lite.com/fiberglass-doors/af-100-af-pultruded-smooth-door/]
2627. West Virginia University – Constructed Facilities Center [http://www.cemr.wvu.edu/cfc/]
2628. Yprado  [http://www.yprado.eu/] windows and doors
ZellComp, Inc. prefabricated High-Load Structural Decking System [http://www.zellcomp.com/]

J. T. Mottram ©