Publications

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Warwick Research Archive Portal (WRAP)): http://wrap.warwick.ac.uk/view/author_id/5743.html. When the "Author Accepted Manuscript" is in the University of Warwick's open access depository the web link for downloading is given after the publication's details.

National Design Standards:

1. *'Pre-Standard for load and resistance factor design (LRFD) of pultruded fiber polymer (FRP) structures (Final),'* submitted to American Composites Manufacturer Association (ACMA)), 9 November 2010, ACSE, p. 216. Member of drafting project team 2007-10.
2. CEN/TS 19101:2022. '*Design of Fibre-Polymer Composite Structures*,' European Committee for Standardization, CEN/TC 250, 2022. Member of drafting project team WG4.T2 (Mandate M515) and CEN/TC 250 WG4 Fibre Reinforced Polymer Structures.

Books:

3. J. T. MOTTRAM, *'Failure of carbon fibre reinforced laminated plates under biaxial stresses,'* PhD thesis, University of Durham, (1984). Open Access
4. J. T. MOTTRAM, and C. T. Shaw, *'Using finite elements in mechanical design',* McGraw-Hill, Maidenhead, (1996). ISBN 0-07-709093 4 Open Access

Edited Books:

5. J. T. MOTTRAM, and G. J. Turvey, (Eds.), *'State-of-the-art review on design, testing, analysis and application of polymeric composite connections,'* Polymeric Composite Structures Working Group 7, COST C1 Project on Behaviour of Civil Engineering Structural Connections, DG XII, European Commission, Office for Official Publications of the European Communities, Brussels & Luxembourg, (1998), p. 99, in print. (Principal editor)
6. C. Whysall, S. Halliwell, and J. T. MOTTRAM (Eds.), *Proceedings of the 5th International Conference on Advanced Composites in Construction 2011,* University of Warwick. 6-8 September 2011, NetComposites, UK, 2011, pp. 493.
7. J. T. MOTTRAM and J. Henderson (Eds.), *'FRP Bridges - Guidance for Designers'*, prepared by Composites UK: Construction Sector Group, CIRIA C779, London, 2018. ISBN 978-0-86017-794-4 Free download

Chapter or contribution to a Book:

8. (Refereed) J. T. MOTTRAM, and R. Taylor, *'Thermal transport properties,'* in S. M. Lee (Ed), International Encyclopaedia of Composites, VCH publishers, Vol. 5, (1991), 476-496. ISBN 0-89573-290-4
9. COST C1 Management Committee, *'Control of the semi-rigid behaviour of civil*

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10. M. E. Brettle and D. G. Brown, (Ed.), *'Steel building design: Worked examples for students,'* SCI Publication P376, Steel Construction Institute, Silwood, Ascot, 2009. ISBN 978-1-85942-191-*8 Free download*
11. L. Ascione, J-F. Caron, P. Godonou, K. van IJselmuijden, J. Knippers, T. MOTTRAM, M. Oppe, M. Gantriis Sorensen, J. Taby and L. Tromp. Editors: L. Ascione, E. Gutierrez, S. Dimova, A. Pinto and S. Denton. '*Prospect for New Guidance in the Design of FRP*,' Support to the implementation and further development of the Eurocodes, JRC Science and Policy Report, Policy Framework Existing Regulations and Standards, Prospect for CEN Guidance, European Commission, Joint Research Centre Institute for the Protection and Security of the Citizen, JRC99714, EUR 27666 EN, European Union, Luxembourg, (2016), p. 171. ISBN 978-92-79-54225-1 10.2788/22306 Free download
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180. J. Russell, X. Wei, S. Zivanovic and J. T. MOTTRAM, '*Influence of material properties on the dynamic characteristics of an FRP suspension bridge*,' in Proceedings 21st International Conference on Composite Structures, Bologna, Italy, (3 - 7 September 2018). Paper 304.S
181. Z. Al-Nabulsi, M. Gillie, J. T. MOTTRAM, N. Kourra and M. Williams, '*Potential for metal 3D printing in structural engineering*,' in Proceedings of First European Conference on Structural Integrity of Additively Manufactured Materials (ESIAM 19), Norwegian University of Science and Technology, Trondheim, (2019), p 6.
182. G. Kremmyda, A. Georgoulas, Y. Koumpouros, and J. T. MOTTRAM, '*Taxonomy of engineering attributes for tackling humanitarian challenges*,' in Proceedings of the 2020 IEEE Global Engineering Education Conference (EDUCON) 27–30 April 2020, Porto, Portugal, (2020), 1003–1008.
183. J. M. Russell, J. T. MOTTRAM, S. Živanović. and X. Wei, '*Design and performance of a bespoke lively all-FRP footbridge*,' *in Pakzad S. (Eds) Dynamics of Civil Structures*, Volume 2. Conference Proceedings of the Society for Experimental Mechanics Series. Springer, Cham, (2020), 125-128. 10.1007/978-3-030-12115-0_16
184. L. Ascione, J. R. Correia, T. Keller, J. Knippers, J. T. MOTTRAM, C. Paulotto and J. Sena-Cruz, '*Design of fibre-polymer composite structures - European Technical Specification: Overview and scope*,' in Proceedings of 20th European Conference on Composite Materials (ECCM20), (2022), Paper 61551.
185. J. R. Correia, J. Pacheco, J. D. Sorensen, T. Keller, J. T. MOTTRAM, J. Sena-Cruz, *'Design of fibre-polymer composite structures – European Technical Specification: Basis of Design*,' in Proceedings of 20th European Conference on Composite Materials (ECCM20), (2022), Paper 61625.
186. J. Sena-Cruz, M. Garrido Mário, J. R. Correia, J. Pedro, T. Keller, J. T. MOTTRAM, '*Design of fibre-polymer composite structures – European Technical Specification: Temperature and moisture effects*,' in Proceedings of 20th European Conference on Composite Materials (ECCM20), (2022), Paper 61619.
187. J. T. MOTTRAM, L. Tromp, M. Pavlovic, J. R. Correia, T. Keller and J. Sena-Cruz, '*Design of fibre- polymer composite structures – European Technical Specification: Combined stresses*,' in Proceedings of 20th European Conference on Composite Materials (ECCM20), (2022), Paper 61618.
188. T. Keller, J. R. Correia, J. T. MOTTRAM, and J. Sena-Cruz, '*Design of fibre-polymer composite structures – European Technical Specification: Fatigue and detailing*,' in Proceedings of 20th European Conference on Composite Materials (ECCM20), (2022), Paper 61617.
189. J. T. MOTTRAM, 'Preparation of a resistance formula for net-tension failure of single and multi-rowed bolted connections of fibre-polymer composite,' in Proceedings of Conference on Fibre Polymer Composites in Construction (FPCC), Composite Connections, (2022), p. 21-27. Open Access

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190. A. J. Cartwright and J. T. MOTTRAM, *'Elevating platform design - a feasibility study',* Mechanical and Material Group, Research Report No. 1, Dept. of Engineering, WU, (Jan. 1989), pp. 25.
191. J. T. MOTTRAM and R. P. Johnson, *'Push tests on studs welded through profiled steel*

sheeting,' Civil Engineering Group, Research Report CE27, Dept. of Engineering, WU, (May 1989), pp. 63. Annex to CE27 Jan. 99 pp. 15. (Report to the Steel Construction Institute, Ascot.)

192. A. J. Cartwright, J. T. MOTTRAM and P. J. Kimber, *'Elevation mechanism design project,'* Mechanical and Material Group, Research Report No. 2, Dept. of Engineering, WU, (Nov. 1990), pp. 7.
193. J. T. MOTTRAM, *'Connection tests for pultruded frames,'* Civil Engineering Group, Research Report CE47, Dept. of Engineering, WU, (July 1994), pp 62. (As part of the EUREKA project EU468:EUROCOMP.)
194. *'Department of engineering higher degrees by research student handbook,'* Postgraduate Degrees Committee, Department of Engineering, WU, Versions I-II (1996-1999), pp. 70. Prepared and maintained by J. T. MOTTRAM.
195. J. T. MOTTRAM, *'Further tests on beam-to-column connections for pultruded frames: Flange-cleated - Experimental problems and results,'* Civil Engineering Group, Research Report CE60, School of Engineering, WU, (February 1999), pp. 60.
196. J. T. MOTTRAM, *'Review of beam-to-column design equations for wide-flange pultruded structural shapes,'* Civil Engineering Group, Research Report CE65, School of Engineering, WU, (March 2000), pp. 50.
197. J. T. MOTTRAM, *'Literature database on R&D with pultruded fibre reinforced polymers,'* School of Engineering, University of Warwick. approaching 3000 entries and updated monthly, pp 239.

Presentations with no written paper. Invitations to address conferences, Universities, companies and learned societies:

198. J. T. MOTTRAM and R. Taylor, *'Thermal expansion behaviour of phenolic composite materials,'* 9th European Conference on Thermophysical Properties, Manchester, 17-21 September 1984.
199. (**Invited**) J. T. MOTTRAM, *'Structural properties of pultruded I- and box-sections,'* Catholic University of America, Washington D.C., USA, 11 May 1992.
200. (**Invited**) J. T. MOTTRAM, *'Design charts for the thermal conductivity of two-phase solid composite materials,'* Institute of Polymer Mechanics, Riga, Latvia, 2 May 1993.
201. (**Invited**) J. T. MOTTRAM, *'Artificial neural networks for ultrasonic testing,' Institute of Polymer Mechanics,'* Riga, Latvia, 2 May 1993.
202. J. T. MOTTRAM, *'Beam-to-column connection for pultruded frames,'* Report to members of EUROCOMP project team (EUREKA No. EU468), London, 11 May 1994.
203. J. T. MOTTRAM, *'Proposal for new COST C1 working group - Polymeric Composite Materials,'* 2nd COST C1 Workshop on Semi-rigid behaviour of Civil Engineering Structural Connections, Prague, Czech. Republic, 26-28 Oct. 1994.
204. (**Invited**) J. T. MOTTRAM, *'Connections for pultruded frames,'* 1st Israeli Workshop on Composite Materials for Civil Engineering Construction, NBRI, Haifa, Israel, 29 May 1995.
205. J. T. MOTTRAM, *'Behaviour of connections in frames of fibre-reinforced polymer section - a review of our research,'* 1st meeting of the COST C1 project Working Group 7 on Polymeric Composite Structures, University of Warwick, UK, 25-26 Sept. 1995.
206. (**Invited**) J. T. MOTTRAM, *'Jointing techniques for advanced composites: Bolted connections,'* Advanced Composites Informal Study Group, The Institution of Structural Engineers, London, 25 March 1996.

207. J. T. MOTTRAM, *'Semi-rigid connections for frames of fibre-reinforced polymer,'* 2nd meeting of the COST C1 project Working Group 7 on Polymeric Composite Structures, University of Patras, Greece, 6-7 Sept. 1996.
208. (**Invited**) J. T. MOTTRAM, *'Assembling composite profiles for construction,'* Kolding Bridge Opening and Conference, Fiberline Composites A/S, Kolding, Denmark, 18 June 1997.
209. (**Invited**) J. T. MOTTRAM, *'Assembling composite profiles for construction'*, to staff and quests at EMPA, Swiss academics and industrialists, EMPA, Duebendorf, Switzerland, 10 Sept. 1997.
210. J. T. MOTTRAM, *'Contribution to preparation of working group publication - State-of-the-art review on design, testing, analysis and application of polymeric composite connections,'* 3rd meeting of the COST C1 project Working Group 7 on Polymeric Composite Structures, EMPA, Duebendorf, Switzerland, 13-14 September 1997.
211. J. T. MOTTRAM and G. J. Turvey, *'Member design with pultruded structural profiles,'* Workshop on Composites in Construction, BRE, Garston, 23 February 2000.
212. (**Invited Poster**) J. T. MOTTRAM and G. J. Turvey, *'Structural integrity of bolted joints for GRP profiles,'* EPSRC Structural Integrity Workshop, Churchill College, Cambridge, 18 September 2000.
213. J. T. MOTTRAM**,** *'Design of connections,' 1st CoSACNet Workshop (EPSRC Network for Composites in Construction),* University of Southampton, 30 January 2001.
214. J. T. MOTTRAM**,** *'Design manuals for pultruded structurals: Why Warwick University's research is relevant and timely,'* 2nd CoSACNet Workshop (EPSRC Network for Composites in Construction), Institution of Structural Engineers, London, 30 April 2001.
215. (**Invited**) R. P. Jones, W. Hall, and J. T. MOTTRAM, *'Finite element modelling and simulation for a smart tyre,'* Tire Technology EXPO 2002, Hamburg, 20-22 February 2002.
216. J. T. MOTTRAM, *'Why is the design of primary connections a major engineering issue?'* 6th CoSACNet Workshop, University of Warwick, 11 September 2002.
217. G. J. Turvey and J. T. MOTTRAM, *'Design guidance for bolted joints of pultruded FRP material,'* 6th CoSACNet Workshop, University of Warwick, 11 September 2002.
218. C. Lutz, P. Wang, G. J. Turvey and J. T. MOTTRAM, *'Behaviour of single and multi-row bolted joints of pultruded FRP material',* 6th CoSACNet Workshop, University of Warwick, 11 September 2002.
219. (**Invited**) J. T. MOTTRAM, *'Material and structural characterisation of pultruded structural shapes,'* to CCLAB at the Swiss Federal Institute of Technology, EPFL Lausanne, 25 September 2002.
220. (**Invited**) L-Y Li, J. Purkiss, S. Williamson, M. Saidani, R. P. Johnson, W. J. Lewis and J. T. MOTTRAM, *'Research in structural engineering, A review of current research being carried out at local universities,'* Technical Meeting for the Midland Counties Branch of The Institution of Structural Engineers, Birmingham, 22 March 2005.
221. (**Invited**) J. T. MOTTRAM, *'Civil engineering research at Warwick University with polymer composites,'* NGCC R&D Subgroup Seminar on the Status of Polymer Composite Research in UK Civil Engineering Departments, Institution of Structural Engineer, London, 10 November 2005.
222. (**Invited**) J. T. MOTTRAM, *'Forensic engineering: Learning from failure, with an emphasis of its Impact to the marine sector,'* Seminar to the Fluid Structure

Interactions Research Group and MSc Students in the School of Engineering at University of Southampton, 2 March 2006.

223. (**Keynote address)** J. T. MOTTRAM, *'Challenges for the design of connections and joints in all-FRP construction,'* IUAV-AICO Seminar on Costruzioni in Materiale Compositio – All FRP Constructions, (IUAV) University of Venice, 18 September 2007.
224. (**Chairman's Address**) J. T. MOTTRAM*, 'New build with fibre reinforced polymer shapes,'* To members of the Midland Counties Branch to the Institution of Structural Engineers, 12 February 2009.
225. J. T. MOTTRAM, *'New build with fibre reinforced polymer shapes,'* To Bridge Engineering Group at Mott MacDonald, East Croydon, 27 February 2009.
226. (**Invited**) J. T. MOTTRAM, *'Development of prescriptive rules for the design of structural components,'* in Joining Technologies for FRP Composite Materials Workshop, at NetComposites, Chesterfield, 17 November 2009.
227. (**Invited**) J. T. MOTTRAM, *'New build with fibre reinforced polymer shapes and systems,'* Engineering Department Structures Research Seminars, Cambridge University, Cambridge, 14 May 2010.
228. L. C. Bank and J. T. MOTTRAM, *'Towards designing pultruded structures with an ASCE standard,'* Proceedings Fifth International Conference on Advanced Composites in Construction (ACIC 2011), Coventry (Warwick University), 6 -8 September 2011.
229. (**Invited**) J. T. MOTTRAM*, 'Innovative composites and nano ideas,'* Opening talk to breakout session at 1st meeting of EPSRC Network LIMES.NET (Network for Low Impact Materials and innovative Engineering Solutions for the Built Environment), University of Bath, 15 September 2011.
230. **(Visiting Professor)** J. T. MOTTRAM, *'New build with fibre reinforced polymer shapes and systems,'* to students and staff at Iuav Venezia, Italy, 8 November 2012.
231. **(Visiting Professor)** J. T. MOTTRAM, *'Design guidance for bolted connections in structures of pultruded shapes: Resolving known gaps in knowledge,'* Research talk at Iuav, Venezia, Italy, 17 December 2012.
232. J. T. MOTTRAM, *'New build with fibre reinforced polymer shapes and systems,'* to students and staff in the Department Civil Engineering at Coventry University, 23 January 2013.
233. **(Visiting Professor)** J. T. MOTTRAM, *'Simple design approaches and new ways for composite materials,'* Talk for architects and Engineers in a CDP two-day workshop, Laboratorio di Scienza delle Costruzioni (LabSCo), Università IUAV di Venezia, Venice, Italy, 7 February 2013.
234. **(Invitation only)** J. T. MOTTRAM, *'Confidence in durable composites (DURACOMP)',* Proceedings of the FIF5 forum (EPSRC Network), Churchill College, Cambridge, 27-28 March 2013.
235. Boscato, G., Casalegno, C., MOTTRAM, J.T. and Russo, S., '*Time-dependent effects on critical buckling load of pultruded colum*n,' Session 7: Composite structures in civil engineering, in Proc. 17th Inter. J. Conf. on Composite Structures (ICCS17), Porto, 17-21 June 2013. (Extended Abstract No. 3053)
236. J. T. MOTTRAM, *'New build with fibre reinforced polymer shapes and systems,'* to students and staff in the Department Civil Engineering at Imperial College, London, 11 July 2013.
237. N. S. Matharu and J. T. MOTTRAM, *'Partial factor for bearing failure in bolted connections for pultruded shapes,'* NetComposites Event Joining Technologies for

Fibre-Reinforced Polymer Composite Materials on 8 May 2014, at WMG, The University of Warwick.

238. A. Gand, T-M Chan and J. T. MOTTRAM, *'Compression strength characterisation and behaviour of pultruded glass fibre reinforced polymer closed sections,'* in Proceedings of Inter. Conf. Composites/Nano Engineering (ICCE-22), St. Julian, Malta, 13-19 July 2014.
239. Gand A.K., Sidhu H. S., Mottram J.T. and Chan T-M., *'Reciprocally configured and supported modules (RCSM) of Glass Fibre Reinforced Polymer (GFRP) hollow square sections – Experimental investigation*,' in Proceedings of Inter. Conf. Composites/Nano Engineering (ICCE-22), St. Julian, Malta, 13-19 July 2014.
240. B. Zafari, N. S. Matharu and J. T. MOTTRAM, *'Accelerated ageing of pultruded fibre reinforced polymers: Physical and mechanical characterization,'* in Proceedings of Inter. Conf. Composites/Nano Engineering (ICCE-22), St. Julian, Malta, 13-19 July 2014. (Extended abstract, pp. 2)
241. B. Zafari, J Qureshi and J. T. MOTTRAM, *'Resin Injected bolted connections: Fatigue and creep Testing towards achieving slip-resistant joints in FRP bridge engineering,'* FRP Bridges 2014, 11-12 September 2014, London.
242. **(Invited)** J. T. MOTTRAM, *'Toward designing pultruded structures with a design standard.'* in session on Composites in Construction at Composite Engineering Show, NEC, Birmingham, 12 November 2014.
243. **(Invited)** J. T. Mottram, '*Structural engineering research at Warwick University for design guidance*,' NGCC Industry Showcase, NCC, Bristol, 23 April 2015.
244. A. M. Girao Coelho, J. T. MOTTRAM, K. A. Harries, '*Parametric study of net section failure of pultruded connections with three-dimensional finite element approach*,' in Session 6.1 to Proceedings of 18th Inter. Conf. on Composite Structures (ICCS18), Lisbon, 15-18 June 2015.
245. S. A. Grammatikos, R. J. Ball, M. C. Evernden, B. Zafari, and J. T. MOTTRAM, '*Structural deformation assessment of glass fibre reinforced polymers subjected to hygrothermal aging*,' in Session 8.1 to Proceedings of 18th Inter. Conf. on Composite Structures (ICCS18), Lisbon, 15-18 June 2015.
246. A. M. Girão Coelho, N. S. Matharu and J. T. MOTTRAM, '*Parametric study of net section failure of pultruded connections with three-dimensional finite element approach*,' Proceedings 5th ECCO-MAS Thematic Conference on Mechanical Response of Composites, Bristol, UK, 7-9 September 2015.
247. J. T. MOTTRAM, '*Simple design approaches and new ways for composite materials*,' School of Engineering Seminar Programme, Warwick University, 20 November 2015.
248. N. Farmer and J. T. MOTTRAM, '*Development of UK design guidance for FRP bridges*,' Proceedings of Composites in Construction 2017 (CompIC 2017), Amsterdam, The Netherlands, 31 January – 1 February 2017.
249. J. T. MOTTRAM, '*New ways for composites materials*,' Institution of Structural Engineers Midland Counties Region Technical Meeting, University of Birmingham, 24 October 2017.

Other outputs:

250. (**Invited**) J. T. MOTTRAM, D. A. Hutchins, E. L. Hines, P. Corcoran, and D. M. Anthony, *'Detection of artificial defects in fibre reinforced composites using artificial neural networks,'* Polymer Engineering Conference, Loughborough Univ., Sept. 22-23rd 1992,

Polymer Engineering Group, (1992), p 5.

251. (**Invited**) J. T. MOTTRAM, *'Potential in building structures,'* One day seminar on Advanced Composites in Building, Civil Engineering & Offshore Structures, Inst. Civil Engineers, 1 Nov. London, 1995.

Book reviews:

252. (**Invited**) J. T. MOTTRAM, in *Proceedings of the Institution of Civil Engineers, Structures and Buildings,* **104**, May, (1994), 241-242, *'Polymer Composites for Civil and Structural Engineers*', L. Hollaway, Blackie Academics & Professional, (1993). ISSN 0965-0911
253. **(Invited**) J. T. MOTTRAM, in *J. Composites for Construction, **1** 2, (1997), 79-80, 'Structural Design of Polymer Composites - EUROCOMP Design Code and Handbook',* J. L. Clarke (Ed.), S & F N Spon, London, (1996). ISSN 1090-0268
254. (**Invited**) J. T. MOTTRAM, in *Proceedings of the Institution of Civil Engineers, Structures and Buildings,* **146** (2), (2001), p. 235. *'Plasticity for Engineers: Theory and Applications,'* C. R. Calladine, Horwood Series in Engineering Science, Horwood Publishing, Chichester, (2000). ISSN 0965-0911
255. J. T. MOTTRAM, in *Proceedings of the Institution of Civil Engineers, Forensic Engineering,* **164** 3, (2011), 143-143, ISSN: 2043-9903, E-ISSN: 2043-9911, of N. F. MacAlevey, *'Structural Engineering Failures: lessons for design,'* Createspace, LaVergne, TN, USA, (2010) pp. 286. ISBN 978-1453745779
256. (**Invited**) J. T. MOTTRAM, in *The Structural Engineer*, 98 3, 2020, 37, ISSN: 2043-9903, N. Nastar and R. Liu, *'Failure Case Studies: Steel Structures,'* 2020, American Society of Civil Engineers, Reston, VA, pp. 55. ISBN 978-0-7844-1530-6
257. (**Invited**) J. T. MOTTRAM, in *The Structural Engineer*, 99 11, 2021, 64, ISSN: 2043-9903 D. Blockley, *'Building Bridges: Between Theory and Practice,'* World Scientific, 2021. ISBN: 978-1-78634-762-6 (hardcover); 978-1-78634-764-0 (ebook)

Letters and publicity items:

258. J. T. MOTTRAM, *'Optimising composites',* in R. Swan (Ed.), Bridge Design and Engineering, Route One Publishing, 5, (Nov 1996), 7.
259. J. T. MOTTRAM *(*on behalf of IStructE Research Panel), *'Towards a brand new structural material standard,'* Innovation & Research, May 2009.

Philatelic Studies:

260. J. T. MOTTRAM, 'Variety on SG Spec. C10 Plate 59 PL,' *Focus on GB – 2, The GB Journa*l, **41** 2, (2003), 37. ISSN 0430-8913 Access members only

DSc Commentary:

J. T. MOTTRAM, *'Characterisation for pultruded fibre reinforced polymer and other composite material structures,'* DSc thesis commentary, University of Warwick, (2007).