



CURRICULUM VITAE

Name: Sigurdur Sigurdarson
Born: 1956
Nationality: Icelandic
Languages: Icelandic, English, Danish and Norwegian.
Position: Principal, IceBreak Consulting Engineers ehf.
Senior Coastal and Harbour Engineer,
Icelandic
Maritime Administration

Education: 1980 B.Sc. Civil Engineering, University of Iceland
Thesis: Ocean Waves and Floating Structures
1982 M.Sc. Civil Engineering, Technical University of Denmark
Thesis: Wave Grouping in Natural Waves

Employment:

1982 - 1984 Odense Steelshipyard Lindø, Denmark
From 1984 Icelandic Harbour Authority/Icelandic Maritime Administration
From 2010 IceBreak Consulting Engineers ehf.

Professional societies:

Member of the Association of Chartered Engineers in Iceland

Fellowship:

1991 Japanese Government Research Awards for Foreign Specialists,

Seminars/teaching:

2000 ICCE 2000, Sydney, Short Course, Berm Breakwaters, ASCE.
2000 Supervisor for BSc thesis at Technical University of Iceland
2002 Universidad de Cantabria, seminar: Statically stable berm breakwaters
2003 Supervisor for BSc thesis at Technical University of Iceland
2005 University of Iceland, Coastal Engineering, MSc degree course
2007 University of Iceland, Coastal Engineering, MSc degree course
2009 University of Iceland, Coastal Engineering, MSc degree course
2011 University of Iceland, Coastal Engineering, MSc degree course
2011 Supervision of two MSc thesis at the University of Iceland

Invited presentations:

1998 Intern. Conf. on Coasts, Ports and Marine Structures, Tehran, Iran.
Latest Development in Berm Breakwaters, the Icelandic Type.
1999 Invited presentation of the Icelandic type Berm Breakwater at CSIR in Stellenbosch, South Africa.
2000 Invited paper on the 13th Nordic Geotechnical Conference in Helsinki, June 2000.
2001 Invited paper on the International Workshop on Advanced Design of Maritime Structures in the 21st Century, PHRI, Japan.
2002 Invited presentation on the Armourstone Users Group Ninth Annual Meeting, HR Wallingford.
2007 Invited paper on the International Conf. on Infrastructure Development and Port Management, Chennai, India, *The statically stable Icelandic-type berm breakwater.*



- 2009 Invited presentation at the Port and Maritime Organisation of Iran, The Icelandic-type berm breakwater, 25 years experience.
- 2010 Invited presentation at the 17th Annual Meeting of the Armourstone Users Group, Experiences with the use of the Rock Manual, 2nd ed. and the EN 13383 in selecting appropriate test methods and frequencies.

Memberships of Committees:

- PIANC Working Group MarCom 47 “Criteria for the selection of breakwater types, and their optimum damage risk level”, 2004 – present.
- PIANC working group 40 “Berm Breakwaters”, 1998-2003.
- Berm Breakwater Structure group, EU-MAST research project, 1995 –1997.
- Rubble Mound Structures Committee of the ASCE, 1995-2007.
- COPRI Coastal Structures Committee of the ASCE, from 2007
- Scientific committee for the Fourth Int. Conference on Coasts, Ports and Marine Structures ICOPMAS “2000”, Bandar Abbass, Iran.
- International Scientific Advisory Committee for the 5th International Conference on Coasts, Ports and Marine Structures, ICOPMAS 2002, Ramsar, Iran.
- Coastal Structures 2003 Conference, ASCE, International Scientific Advisory Committee, Portland, Oregon.
- Coastal Structures 2007 Conference, ASCE, International Scientific Advisory Committee, Venice, Italy.
- Coastal Structures 2011 Conference, ASCE, International Scientific Advisory Committee, Yokohama, Japan.

Reviewer for a scientific journals:

- Coastal Engineering and Ocean Engineering published by Elsevier
- Coastal Engineering Journal published by World Scientific.

Recent projects:

- To present Design, tendering, project management, supervision and monitoring of projects involving breakwaters, shore protection and various rubble mound structures.
- To present Planning of fishing harbours, industrial harbours and commercial harbours.
- To present Feasibility studies for various industrial harbours, container and multipurpose harbours.
- To present Numerical and physical model studies, wave climate, wave refraction and overtopping studies for various projects.
- To present Design, tendering, project management and supervising various harbour structures, breakwaters, dredging works and shore protection projects.
- 2008-11 Oakajee Port Development project in Western Australia for Oakajee Port & Rail Ltd., design of a berm breakwater.
- 2011 Snøhvit Train II, Norway, breakwater evaluations for Norconsult AS.
- 2010-11 Study on littoral drift at Vik on Iceland’s south coast with an annual erosion of about 10m, proposal of an erosion control with a groyne structure.
- 2009-10 Identification of Investment needs in fishing ports and landing sites in developing countries. Investment Assessment Project for FAO.
- 2009-11 Extension of large breakwaters in the Middle East, specialist on armourstone for breakwaters, for WSP Africa, RSA

- 2009-11 Design consultancy for a Middle East Consulting company on a breakwater design and quarry development.
- 2008-11 Advising a major Middle Eastern Government entity on claims in excess of US\$300 million from an international contractor consortium related to the construction of a port and associated facilities
- 2008-09 Shtokman Development in Russia for Multiconsult AS, Norway, design of breakwaters and revetments.
- 2008 Oluvil harbour, Sri Lanka, alternative design of breakwaters, Icelandic-type berm breakwaters and quarry consulting for MTHøjgaard a/s, Denmark.
- 2008 A Coruna, Spain, Punta Langosteira breakwater, advice on quarry operation for the contractor UTE Langosteira.
- 2008 Heavy Offload Facility and Tug Harbour for the Pilbara 320 Mtpa Port Project at Cape Lambert, Western Australia, design of breakwater for JFA Consultants.
- 2007 Harbour study for aluminium plants at Keilisnes and Þorlákshöfn, pre-feasibility study for Hydro Aluminium, Norway.
- 2007 Impacts of mining of sea gravel in Kollafjörður on adjacent shores, for Bjorgun ehf.
- 2007 Operational limits for the oil terminal in Hvalfjörður for Oliudreifing.
- 2007 Feasibility study for a new entrance into the harbour of the Westman Islands for the municipality.
- 2007 Impact of overtopping waves at Eyarbakki, Iceland, for Stafnhús ehf.
- 2007 Design of a rock protection of a sewer outlet through the surf zone on an exposed rocky coastline for the Town of Hafnarfjörður.
- 2006 Impact of overtopping waves at Agnes Development, Norway, for Multiconsult AS, Norway.
- 2006 Helguvík – Aluminium Plant, Harbour Study for the Port of Reykjanes
- 2006 Planning and design of wave protection for a new offshore airport for Reykjavík for Honnun Consulting Engineers.
- 2006 Fishery and aquaculture rehabilitation and support project in Aceh province of Sumatra, Indonesia, for COFAD GmbH on behalf of GTZ.
- 2005 Aluminium Plant Northern Iceland – Site Comparison, Harbour Study for Ministry of Industry and Commerce and Alcoa
- 2005 Sep.-Dec. FAO - Preparation of a Master Plan for reconstruction and development of fisheries anchorages and associated facilities along the coasts of Sri Lanka.
- 2005 February-March. FAO Tsunami Response Team in Indonesia, plans for rehabilitation and reconstruction of the fishing harbours and fish-landing sites in Aceh, Indonesia.
- 2001 Environmental Impact Assessment for an armourstone quarry in Husavík for the Town of Husavík.
- 2001 Environmental Impact Assessment for an armourstone quarry in Grindavík for the Grindavík municipality.
- 2001-2003 Hammerfest berm breakwater, for Multiconsult Norway, design and construction supervision.
- 1999-2001 Sirevåg berm breakwater, for the Norwegian Coastal Administration, design, tender documents and construction supervision.

Design of breakwaters:

1984-2011 Planning and design of various breakwaters, both berm breakwaters and conventional rubble mound breakwaters, revetments and shore protection works. Among those are:

- Bakkafjara, berm breakwaters, 2008, Hs = 6.1 m, 600,000 m³.
- Helguvík, extension, berm breakwater, 2008, Hs = 5.0 m, 350,000 m³.
- Rif, extension, conventional breakwater, 2008, Hs = 4.0 m, 104,000 m³.
- Saudarkrokur, new brkw, conventional brkw, 2008, Hs = 2.5 m, 52,000 m³.
- Þórshöfn, extension, berm breakwater, 2007, Hs = 4.5 m, 41,000 m³.
- Þorlákshöfn, berm breakwater, Hs = 5.5 m, 230,000 m³.
- Vopnafjörður, berm/conv. breakwater, Hs = 5 m, 140,000 m³.
- Hammerfest LNG plant, Norway, berm breakwater, Hs = 7.5 m, 3,000,000 m³.
- Húsavík berm breakwater Hs= 6.8 m, 270,000 m³.
- Grindavík berm breakwaters Hs= 5.1 m, 170,000 m³.
- Hafnarfjörður berm breakwater, Hs= 3.0 m, 550,000 m³.
- Sirevåg, Norway, berm breakwater, Hs= 7.0 m, 620,000 m³.
- Bolungarvík berm breakwater Hs= 6.3 m, 200,000 m³.
- Blönduós berm breakwater Hs= 4.8 m, 95,000 m³.
- Húsavík berm breakwater Hs= 4.0 m, 35,000 m³
- Akranes berm breakwater Hs= 3.8 m, 25,000 m³
- Dalvík berm breakwater Hs= 2.5 m, 103,000 m³
- Djúpivogur berm breakwater Hs= 3.0 m, 33,000 m³
- Keilisnes berm breakwater Hs= 5.9 m, water depth -32 m, 1,750,000 m³
- Hornafjörður shore protection, conv. rubble mound, 60,000 m³
- Hornafjörður berm breakwater jetty Hs= 3.8 m, 100,000 m³
- Skagaströnd, protection of caisson breakwater Hs= 3.8 m, 100,000 m³
- Húsavík, berm breakwater extension Hs= 5.0 m, 70,000 m³
- Þórshöfn, berm breakwater extension Hs= 4.5 m, 86,000 m³
- Siglufjörður, conventional rubble mound breakw. Hs= 2.0 to 2.5 m, 33,000 m³

Main publications:

- Sigurdarson, S., Mocke, R., Primmer, P. and Gretarsson, S., 2011. **The Icelandic-type berm breakwater**. Proc. Coasts and Ports 2011, Perth, Western Australia.
- Sigurdarson, S. and van der Meer, J., 2011. **Front Slope Stability of the Icelandic-type Berm Breakwater**. ASCE, Proc. Coastal Structures 2011, Yokohama, Japan.
- Sigurdarson, S., Mocke, R., Smarason, O, Carlton, B. and Allsop, W., 2009. **Development of an Icelandic-type berm breakwater for the Oakajee port project in Western Australia**. ICE, Proc.Coasts, Marine Structures and Breakwaters 2009, Edinburgh, UK.
- Mocke, R., Sigurdarson, S., Carlton, B. and Smarason, O., 2009. **Quarry and breakwater design studies for an Icelandic-type berm breakwater for Oakajee Port development in Western Australia**. Proc. Coasts and Ports 2009, Wellington, NZ
- Mocke, R., Carlton, B., Jupp, R., Cork, S. and Sigurdarson, S., 2009. **Planning and Design for the Oakajee Port Development project in Western Australia**. Proc. Coasts and Ports 2009, Wellington, NZ.
- Sigurdarson, S., van der Meer, J.W., Tørum, A. and Tomasicchio, R., 2008. **Berm Recession of the Icelandic-type Berm Breakwater**. ASCE, Proc. ICCE 2008, Hamburg, Germany, pp.3311-3323.

- Sigurdarson, S. Gretarsson, S. and van der Meer, J.W., 2008 **The Icelandic-type Berm Breakwater for Large Design Wave Heights**. Proc. COPEDEC VII, Dubai, UAE.
- Sigurdarson, S. Gretarsson, S. and van der Meer, J.W., 2008 **The Icelandic-type Berm Breakwater – breaking the 8.0 m significant wave height limit**. Proc. PIANC AGA, Beijing, China.
- Sigurdarson, S., van der Meer, J.W., Burcharth, H.F. and Soerensen, J.D., 2007. **Optimum Safety Levels and Design Rules for the Icelandic-type Berm Breakwater**. ASCE, Proc. Coastal Structures 2007, Venice, Italy.
- Sigurdarson, S., Smarason, O.B., Viggosson, G. and Bjørdal, S., 2006. **Wave height limits for the statically stable Icelandic-type Berm Breakwater**. ASCE, Proc. ICCE 2006, San Diego, USA.
- Sigurdarson, S., Loftsson, A., Lothe, A.E., Bjertness, E. and Smarason, O.B., 2005. **Berm Breakwater Protection for the Hammerfest LNG Plant in Norway - Design and Construction**. ICE, Proc. Coastlines, Structures and Breakwaters 2005, ed. N.W.H. Allsop, Thomas Telford, London, UK, pp.349-362.
- Sigurdarson, S., Viggosson, G. and Smarason, O.B., 2005. **Berm Breakwaters**. Appendix 2 to Advances in the Design and Construction of Coastal Structures by I. J. Losada. In P Bruun, ed. **Port and Coastal Engineering – Developments in Science and Technology**, Journal of Coastal Research Special Issue No. 46.
- Sigurdarson, S., Viggosson, G. and Smarason, O.B., 2005. **Recent Berm Breakwater Projects**. Proc Second International Coastal Symposium, Höfn, Iceland.
- Sigurdarson, S., and Wickramasooriya, N. 2005. **FAO Consultant End of Mission Report - Master Plan for the Reconstruction and Development of Anchorages and Fish Landing Centres along the coast of Sri Lanka**, Non serial publications - FAO Tsunami Sep-Oct Nov-Dec 05.
ftp://ftp.fao.org/FI/DOCUMENT/tsunamis_05/sri_lanka/cons_miss_rep/Sigurdarson_FinalDec05.pdf
- Sigurdarson, S. 2005. **FAO Consultant End of Mission Report - Rehabilitation and reconstruction of the fishing ports and fish-landing sites in Aceh after the Tsunami -March 2005**, by Sigurdur Sigurdarson, Harbours Expert. Non serial publications -FAO Tsunami March 05
ftp://ftp.fao.org/FI/DOCUMENT/tsunamis_05/indonesia/cons_miss_rep/Sigurdur_Mar_05.pdf
- Bjørdal, S., Vold, S., Viggosson, G. and Sigurdarson, S., 2004. **Design of Berm Breakwater for Extreme Wave Conditions**. ASCE, Proc. 29th ICCE 2004, Lisboa, Portugal.
- Sigurdarson, S., Jacobsen, A., Smarason, O.B., Bjordal, S., Viggosson, G., Urrang C. and Torum, A., 2003. **Sirevåg Berm Breakwater, design, construction and experience after design storm**. ASCE, Proc. Coastal Structures 2003, Portland, Oregon.
- Archetti, R., Lamberti, A., Tomasicchio, G.R., Sorci, M., Sigurdarson, S., Erlingsson, S. and Smarason, O.B., 2002. **On the application of a conceptual abrasion model on six Icelandic breakwaters**. ASCE, Proc 28th ICCE 2002, Cardiff, UK, pp.1511-1523.
- Tørum, A and Sigurdarson, S., 2001. **PIANC WG 40: Guidelines for the Design and Construction of Berm Breakwaters**. ICE, Proc. Coastlines Structures and Breakwaters, London, UK.
- Sigurdarson, S., Viggosson, Tørum, and Smarason, 2001. **Stable berm breakwaters**. PHRI, Proc. International Workshop on Advanced Design of Maritime Structures in the 21st Century, Yokosuka, Japan.
- Sigurdarson, S., Smarason, O.B. and Viggosson, G., 2000. **Design Considerations of Berm Breakwaters**. ASCE, Proc. ICCE 2000, Sydney, Australia.

- Smarason, O.B., Sigurdarson, S. and Viggosson G. 2000. **Quarry yield prediction as a tool in breakwater design**. Keynote lectures NGM-2000. Finish Geotechnical Society.
- Sigurdarson, S., Bjornsson, S., Skulason, J., Viggósson, G. and Helgason, K., 1999. **A Berm Breakwater on a Weak Soil, Extension of the Port of Hafnarfjörður**. Proc. COPEDEC V, Cape Town, RSA.
- Einarsson, S., Sigurdarson, S., Viggósson, G., Smarason, O.B., and Arnorsson, J., 2002. **Berm Breakwaters–Design Construction and Monitoring**. ASCE, Proc. Breakwaters’99. International Symposium on Monitoring Breakwaters, Madison, Wisconsin.
- Sigurdarson, S., Juhl, J., Sloth, P, Smarason, O.B. and Viggosson, G., 1998. **Advances in Berm Breakwaters**. ICE, Proc. Coastlines, Structures and Breakwaters Conference, London, UK.
- Sigurdarson, S, Viggosson, G, Benediktsson, S, Einarsson, S and Smarason, O B, 1998. **Berm Breakwaters, Fifteen Years Experience**. ASCE, Proc. ICCE 1998, Copenhagen, Denmark.
- Viggosson, G. and Sigurdarson, S., 1998. **The Hornafjörður Tidal Entrance, Iceland**, Journal of Coastal Research, SI 26, pp226-233.
- Sigurdarson, S, Viggosson, G, Einarsson, S and Smarason, O B, 1998. **Latest Development in Berm Breakwaters, the Icelandic Type**. Proc. 3rd ICOPMAS, Tehran, Iran.
- Smarason, Sigurdarson, Benediktsson and Viggosson, 1998. **Applications of Armourstone Size Prediction from Discontinuity Measurements in Rock bodies**. Presentation at the Armourstone Meeting, HR Wallingford, UK.
- Sigurdarson, S., Einarsson, S., Smarason, O.B. and Viggosson, G. 1997. **Berm Breakwater in the tidal inlet of Hornafjörður, Iceland**. Proc. MEDCOAST, Qawra, Malta.
- Sigurdarson, S., Viggosson G. Benediktsson, S. and Smarason O.B., 1996. **Berm Breakwaters, Tailor-Made Size Graded Structure**. Proc. 11th Harbour Congress, Antwerp, Belgium.
- Frigaard, P., Hald, T., Burcharth, H.F. and Sigurdarson, S., 1996. **Stability of Reshaping Breakwaters with Special Reference to Stone Durability**. Proc. ICCE 1996, Orlando, Florida, pp. 1640-1647.
- Sigurdarson, S., Viggosson G. Benediktsson, S. and Smarason O.B., 1995. **Berm Breakwaters and Quarry Investigations in Iceland**. Proc. 4th COPEDEC, Rio de Janeiro, Brazil.
- Sigurdarson, S. and Viggosson G. 1994. **Berm Breakwaters in Iceland, Practical Experiences**. Proc. International Conference on Hydro-Technical Engineering for Port and Harbor Construction, Yokosuka, Japan.
- Sigurdarson, S., Viggosson G. and Halldorsson A., 1994. **Rubble Mound Breakwaters and Shore Protection**. Proc. International Coastal Symposium, Höfn, Iceland.
- Viggosson, G., Sigurdarson, S. and Bruun, P., 1993. **Stabilisation of the Tidal Entrance at Hornafjörður Iceland**. Proc. 12th POAC, Hamburg, Germany.
- Viggosson, G. and Sigurdarson, S, 1993. **Improvements of the Tidal Inlet at Hornafjörður, Iceland**. Proc. Hilton Head Island International Coastal Symposium, South Carolina, USA
- Bruun, P., Viggosson, G. and Sigurdarson, S., 1991. **Influence of Ice Covers, Tidal Prism and Tidal Inlets, Hornafjörður, Iceland**. Proc. 11th POAC, St Johns, Canada.
- Viggosson, G., Sigurdarson, S. and Tryggvason, G.Sch., 1988. **Wave Measurements in Iceland**. Journal of Coastal Research, pp. 207-217, Fort Lauderdale, Florida.