• Research and Development
• Education and Outreach
• Design Methods and Guidance
• Standard Specifications
• Vendor Prequalification
• **Research and Development**
  • Norwegian Public Road Administration (1972)
  • EPS Construction Method Development Organization (EDO) – Japan (1986)
  • German Institute for Road and Transport Research (1991)
  • Delft University – Netherlands (1997)
  • USA Geofoam Research Institutions
    • Syracuse University
    • University of Utah
    • University of Illinois
    • University of Memphis
    • Manhattan College
  • Okan University - Turkey
• **Education and Outreach**
  • **International Conferences**
    • 1985 – 1\(^{st}\) International Conference (Oslo, Norway)
    • 1996 – 2\(^{nd}\) International Conference (Tokyo, Japan)
    • 2001 – 3\(^{rd}\) International Conference (Salt Lake City, USA)
    • 2011 – 4\(^{th}\) International Conference (Oslo, Norway)
    • 2016 – 5\(^{th}\) International Conference (Istanbul Turkey?)
  • **Technical Seminars (Professional Meetings and Societies)**
  • **Informal Working Meetings**
  • **Skype Conferencing**
  • **Papers and Reports**
• **Design Methods and Guidance**
    - 2002 Lightweight filling materials for road construction – NPRA Publication No. 100)
    - In Japanese
  - European EPS White Book (2011)
    - EUMEPS Background Information on standardisation of EPS
  - USA - NCHRP Project 24-11(02) Phase I Study (slopes) (2011)
  - Turkey – Manual of Instruction?
• Standard Specifications
  • Material
    • ASTM D6817 (USA)
    • Thermal insulation and light weight fill products for civil engineering applications. Factory made products of expanded polystyrene (EPS White book and EN 14933) (Europe)
  • Transport, Handling, Storage
    • NCHRP 529 (USA)
  • Construction
    • NCHRP 529 (USA)
  • Quality Assurance / Quality Control
    • NCHRP 529 (USA)
• **Vendor/Supplier Prequalification**
  • Ensures quality of product
  • Development of quality assurance / quality control program
    • Independent laboratory verification
      • Cevkak laboratory
      • U. of Okan?
  • Certification of product
  • Certification of production capacity
- Selection of Demonstration Project
- Performance Requirements
  - Settlement tolerances, deformations, acceptable factors of safety, construction time, sequencing, etc.
- Conceptual Design
- Selection of Preferred Alternative
- Final Design
- Costing Estimate and Schedule
- Selection of Contractor
  - Selection of prequalified EPS Vendor
- Construction
  - Material manufacturing
    - Product acceptance
    - Quality control testing and records
  - Transportation
  - On-site storage/stockpiling
  - As-built drawings
- Project Finalization (Acceptance)
• Performance Monitoring
  • Verify performance of geosystem and design
  • Implement field monitoring and instrumentation
    • Foundation deformation monitoring
      • Primary Consolidation Settlement
      • Horizontal movement (slopes)
      • Creep
    • Geofoam
      • Construction movement
      • Long-term creep
      • Stresses, horizontal and vertical
      • Horizontal movement (slopes only)
    • Pavement (survey monuments)

Check
Analyze the results, evaluate progress and identify lessons learned
• Evaluate construction
• Evaluate design
  • Verify against performance goals
    • settlement tolerances
    • deformations
    • schedule
    • cost
• Evaluate constructability
• Recommend actions based on lessons learned
• Revise design guidance, specifications, etc based on findings