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The citations cover the performance, structural design, strength, and fire and weather resistance of plastics for construction materials. Some of the applications include plumbing fixtures, molding fixtures, laminates, roofing materials, and concrete additives. (Contains 112 abstracts)

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17c. NTIS Field Group 50C, 71, 99

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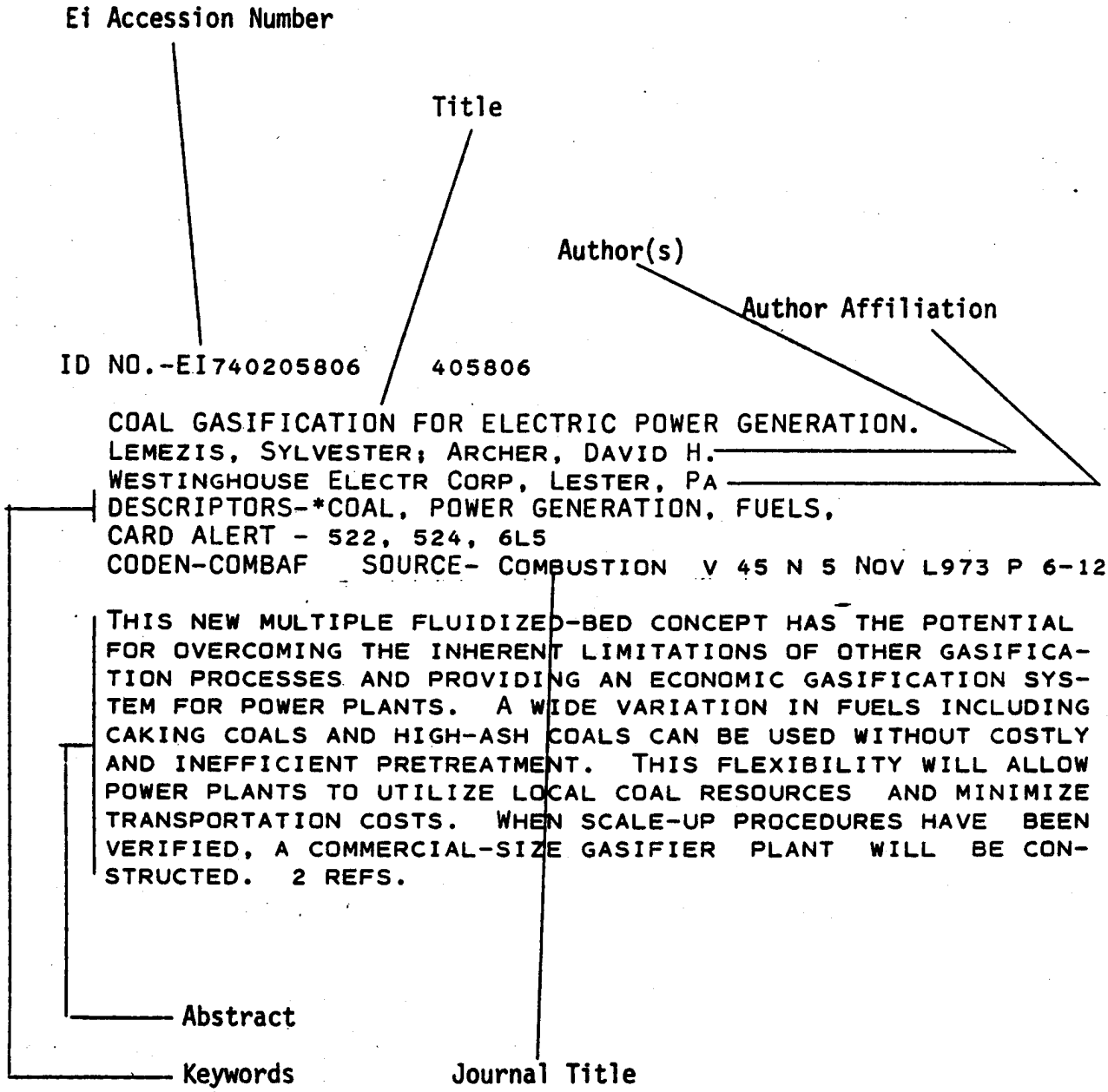
These reports are not available from NTIS.

SAMPLE ENTRY OF A CITATION FROM THE ENGINEERING INDEX DATA BASE



ID NO.- EI771076160 776160

MOEGLICHKEITEN ZUR EINSCHRAENKUNG DER BRANDGEFAHREN BEI DER VERWENDUNG VON PLASTWERKSTOFFEN. $left bracket$ Possibilities of Limiting Fire Hazards Involved in the Use of Plastics in Structural and Engineering Applications $right bracket$.

Hamberger, Wolfgang
Tech Hochsch $left double quote$ Otto von Guericke $right double

Plaste Kautsch v 24 n 3 Mar 1977 p 163-168 CODEN: PLKAAM

DESCRIPTORS: (*PLASTICS, *Flame Resistance), (BUILDING MATERIALS, Plastics), MATERIALS TESTING, (BUILDINGS, Fire Resistance),

IDENTIFIERS: FLAMMABILITY TESTS, FLAME RETARDANTS

CARD ALERT: 402, 415, 423, 817, 914

This paper discusses two principal aspects of avoiding fire hazards in building and equipment made of/with plastics: 1) use of flame retarding agents in plastics compounds employed in structural applications, and 2) building design and other constructional aspects (use of fire proofing surface coatings). Effectiveness of flame retardants is discussed, and some flammability tests used for plastics are briefly reviewed and critically evaluated. 12 refs. In German.

ID NO.- EI771179567 779567

OPTIMUM DESIGN OF A REINFORCED PLASTIC BRIDGE GIRDER.

Alper, H.; Barton, F. W.; McCormick, F. C.
Univ of Va, Charlottesville

Comput Struct v 7 n 2 Apr 1977 p 249-256 CODEN: CMSTCJ

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (PLASTICS, REINFORCED , Applications), (BEAMS AND GIRDERS, Computer Aided Design), (BRIDGES, Design),

CARD ALERT: 415, 817, 408, 723, 401

This paper describes the results of an analytical and experimental investigation concerned with the optimum design of a fiberglass-reinforced plastic flexural number. In the initial phase of the study, seven members were designed, fabricated, load-tested and subsequently analyzed. In order to achieve a more efficient and economical structural system, an iterative algorithm for optimum geometric configuration was developed and used in conjunction with an optimality criterion for optimum member sizing. This procedure was applied to the design of five separate flexural members and final design data for these members are presented and discussed. 18 refs.

ID NO.- EI771071674 771674
PLASTICS IN CONSTRUCTION: PAST, PRESENT, AND FUTURE.
Meyers, George E.
Extrudyne Inc, Amityville, NY
Polym News v 3 n 5 1977 p 251-254 CODEN: PLYNBU
DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (BUILDINGS, Plastics Applications),
CARD ALERT: 402, 415, 817
This is a review of plastics uses in building applications. In this survey particular attention is paid to the production and applications of expanded plastics profiles. Assortment of panels, window frames, moldings and structural members is illustrated along with their structural applications (roofs, walls).

ID NO.- EI770968799 768799

POLYMERS EXPAND IN ROOFING APPLICATIONS.

Anon

Br Plast Rubber Apr 1977 p 56-57, 59 CODEN: BPRUDS

DESCRIPTORS: (*ROOFS, *Maintenance), (BUILDING MATERIALS, Plastics), PLASTICS SHEETS, (PLASTICS INDUSTRY, United Kingdom), MARKETING,

CARD ALERT: 402, 415, 817, 911

This paper reports on the use of plastics sheets in building applications in Great Britain. It is pointed out that as the building market stays down, UK processors are finding polymers go up, in roof repairs and renovations. This applies equally to domestic and insutrial premises; as far as the latter is concerned there is a further need for the use of roofing lights to improve working conditions, ventilation, and fire fighting. A healthy market is served by the manufacturers of rigid plastics sheet such as UPVC, GRP, acrylic and polycarbonate to improve roof illumination. The use of plastics sheets in the German building industry is also included in this market review.

ID NO.- EI770968123 768123

ANWENDBARKEIT VON GF-UP-BAUSTOFFEN UNTER BRANDSICHERHEITLICHEN GESICHTSPUNKTEN. $left bracket$ Applicability of GFRP as Construction Materials from Fire Protection Point of View $right bracket$.

Becker, W.

Kunstst Ger Plast v 66 n 12 Dec 1976 p 810-817 CODEN: KSGPA7

DESCRIPTORS: (*PLASTICS, REINFORCED, *Flame Resistance), (BUILDING MATERIALS, Plastics), GLASS FIBER, POLYESTERS,

CARD ALERT: 415, 812, 817, 914

When glass fiber reinforced, unsaturated polyester resins are used as materials of construction, the fire protection considerations which are normal for all building materials must be taken into account. The suitability of GRP building materials and the resultant potential applications, are determined by the various relevant rules and regulations of the local authorities, and classification according to DIN 4102. In special cases the range of applications of GRP materials can be extended through special proof of sufficient flame resistance by natural-scale fire tests. This should be borne in mind in cases where GRP materials are intended for constructional applications, or contain flame proofing agents, if the structural components made from them cannot be judged as free from risk according to official regulations. 8 refs. In German.

ID NO.- EI770968116 768116

VORGABE UND NACHKONTROLLE KRITISCHER DEHNUNGEN IN DER ANWENDUNG AUF THERMOPLASTISCHE BAUTEILE $EM DASH$ 4. $left bracket$ Specifications and Testing of Critical Strains in the Application on Thermoplastics Structural Components $EM DASH$ 4 $right bracket$.

Pohrt, J.

BASF, Ludwigshafen, Ger

Gummi Asbest Kunstst v 29 n 6 Jun 1976 p 384-387 CODEN: GAKSA2

DESCRIPTORS: (*PLASTICS PRODUCTS, *Mechanical Properties), (THERMOPLASTICS, Testing), (BUILDING MATERIALS, Plastics),

CARD ALERT: 415, 421, 817

In this continuation of an article series the author discusses the following subjects related to the performance evaluation of plastics used in construction applications $EM DASH$ the state of the test specimen; comparison of impact strength with stress cracking behavior; crack formation. Microphotographs of crack formation and crack propagation are included. 5 refs. In German.

ID NO.- EI770965559 765559

APPLICABILITY OF CONCRETE POLYMER MATERIALS FOR USE IN GEOTHERMAL ENVIRONMENTS.

Kukachka, L. E.

Brookhaven Natl Lab, Upton, NY

Int Symp on Oilfield and Geotherm Chem, Proc, Univ of Calif at San Diego, La Jolla, Jun 27-29 1977 Publ by AIME, New York, NY, 1977 Pap SPE 6611 p 229-236

DESCRIPTORS: (*GEOTHERMAL ENERGY, *Corrosion), (CONCRETE CONSTRUCTION, Plastics Applications), BUILDING MATERIALS,

IDENTIFIERS: BRINE, HOT BRINE, SCALING

CARD ALERT: 615, 641, 481, 539, 405, 817

The feasibility of using concrete polymer composites as materials of construction for handling hot brine was demonstrated in 1972. The results from these tests indicated that the composites had long-term stability in seawater at 177 $degree$ C and in acid solutions. Since then the work has been extended to develop materials for use in geothermal systems. To date, high temperature polymer concrete systems have been formulated, and laboratory and field tests performed in brine, flashing brine, and steam at temperatures up to 240 $degree$ C. Results are available from field exposures of up to 12 months in four geothermal environments. Testing at two other sites is in progress. Good durability is indicated. Based upon these results, potential applications in geothermal processes have been identified. 16 refs.

ID NO.- EI770963095 763095

LE MATERIE PLASTICHE NELL'EDILIZIA. $left bracket$ Plastics in Construction $right bracket$.

Sferati, Giuliano; Volpato, Gilberto

Consito, Milano, Italy

Poliplasti Plast Rinf v 24 n 226 Sep 1976 p 27-32 CODEN: PPRFAW

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (CONSTRUCTION INDUSTRY, Italy),

CARD ALERT: 415, 817, 405

This article deals with the use of plastics in the construction industry, particularly that of Italy where consumption reached 227,000 tons in 1974. Characteristics and applications in the building industry of various plastics, including polyvinyl chloride, polystyrene, ABS resins, polyolefins, acrylics, etc. , are discussed and listed in tabular form. The future possibilities of plastics use in the building sector are outlined, and Italian consumption of plastics in construction is compared with Europe's and the U. S. 's. 7 refs. In Italian.

ID NO.- EI770854808 754808

KUNSTSTOFFE IM BAUWESEN. $left bracket$ Plastics in Building Applications $right bracket$.

Dominghaus, Hans

Gummi Asbest Kunstst v 30 n 3 Mar 1977 8 p between p 134 and 146
CODEN: GAKSA2

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (BUILDINGS, Plastics Applications), (ROADBUILDING MATERIALS, Plastics), (FURNITURE MANUFACTURE, Plastics Applications),

CARD ALERT: 402, 406, 415, 817

This paper reviews the present status of plastics applications in the following construction industries $EM DASH$ housing; furniture; concrete structures; containers as temporary shelters for people and storage; hydraulic structures; sanitation and old buildings; various structural applications. Forecast for the future development is included. 27 refs. In German.

ID NO.- EI770751561 751561

POLYMERS AS MATERIALS.

Mark, H. F.; Pearce, E. M.
Polytech Inst of NY, Brooklyn

Int J Polym Mater v 5 n 1-2 1976 p 5-42 CODEN: IJPMCS

DESCRIPTORS: (*POLYMERS, *Molecular Weight), (CRYSTALS, Structure), RUBBER, SYNTHETIC, SYNTHETIC FIBERS, (BUILDING MATERIALS, Plastics), MECHANICAL ENGINEERING,

IDENTIFIERS: MOLECULAR ENGINEERING

CARD ALERT: 415, 801, 815, 818, 819, 901

This review paper discusses the most important principles used in production, processing and applications of synthetic organic polymers which represent useful and increasingly important engineering materials in the construction of buildings, vehicles, engines, applicanes, textiles, packaging, printing and writing materials, plastics, rubber goods and household articles of all kinds. This review is presented under headings $EM DASH$ introduction; molecular weight; crystallinity; molecular engineering of elastomers; molecular engineering of fiber formers, molecular engineering of polymers for building construction. 21 refs.

ID NO.- EI770751414 751414

BIG BOOM IN COMPOSITE STRUCTURES.

Wood, A. Stuart

Mod Plast v 54 n 5 May 1977 p 52-54 CODEN: MOPLAY

DESCRIPTORS: (*PLASTICS, REINFORCED, *Processing), (COMPOSITE MATERIALS, Applications), BUILDING MATERIALS, PIPE, PLASTIC, THERMOPLASTICS,

CARD ALERT: 415, 619, 816, 817

This review paper demonstrates that soaring demand for lightweight, corrosion-resistant pipe $EM DASH$ notably by the water/wastewater market $EM DASH$ is encouraging innovative concepts in composite plastic pipe construction and production. Highlights include: new composites ranging from reinforced polyester/polysulfone for high-pressure steam lines, to reinforced epoxy/PVC for underground pressure lines; a hybrid approach that combines pultrusion and filament winding to overlay liner pipe continuously formed by ultrasonic welding of thermoplastic sheet; and mass production of large-diameter (up to 144 in.) RP and RP/mortar pipe by continuous winding. Advances in technology are discussed in some detail.

ID NO.- EI770637906 737906

SYNTHESIS OF CONSTRUCTION MATERIALS FROM WASTE PRODUCTS.

Koerner, Robert M.; Schoenberger, Robert J.

Drexel Univ, Philadelphia, Pa

New Horiz in Constr Mater, Int Symp, Lehigh Univ, Bethlehem, Pa, Nov 1-3 1976 Publ by Envo Publ Co, Inc, Lehigh Valley, Pa, 1976 v 1, p 111-126

DESCRIPTORS: (*BUILDING MATERIALS, *Waste Utilization), (CONCRETE AGGREGATES, Glass), CONCRETE REINFORCEMENTS, FLY ASH, SCRAP METAL, (PLASTICS, Waste Utilization),

IDENTIFIERS: CONSTRUCTION MATERIALS

CARD ALERT: 412, 913, 817, 531

A number of waste product systems have been examined over the past four years. These include: incinerator ash, shells, coral, and crushed glass for use as aggregate; scrap steel and scrap polymer fibers as reinforcement; and lignite fly ash, and blast furnace slag as cementing materials. Of the various combinations investigated, crushed glass was found to be an excellent aggregate replacement (80% of compressive strength of conventional materials); scrap steel fibers to be excellent reinforcement (100% increase in flexural strength over reinforced materials); and fly ash/slag cement to be an excellent cementing material (85% of compressive strength of standard building blocks). 22 refs.

ID NO.- EI770637901 737901

BUILDING CODES: THE DOOR OPENS WIDER.

Martino, Robert

Mod Plast v 54 n 4 Apr 1977 p 46-48 CODEN: MOPLAY

DESCRIPTORS: *BUILDING CODES, (BUILDING MATERIALS, Plastics), (PLASTICS, FOAMED, Flame Resistance),

CARD ALERT: 402, 415, 817, 914

Amidst controversy over fire safety, building code writers and the plastics industry have entered a new era of cooperation. Foam insulation, object of much recent codes activity, will be the first application to benefit, followed by such others as pipe and home trim. Signs of the new era are amendments by means of which model building codes now give greater attention to plastics as performance alternatives to conventional materials. Also evident from these changes is the beginning of a national trend toward code uniformity, caused in part by the increasing demand for plastics by builders faced with pressing economic problems. New codes deal chiefly with foam. The paper reviews recent codes issued by various involved in supervision of the construction industry and its branches.

ID NO.- EI770531575 731575

INTERNATIONAL CONFERENCE ON FIRE SAFETY, 1ST, PROCEEDINGS, 1976.

Anon

Univ of San Francisco, Fire Saf Cent, Calif

Int Conf on Fire Saf, 1st, Proc, Univ of San Francisco, Calif, Jan 12-16 1976 Publ by Univ of San Francisco, Calif, 1976 436 p

DESCRIPTORS: (*FIRE PROTECTION, *Research), (AIRCRAFT, Fire Protection), (BUILDING MATERIALS, Fire Resistance), FLAMMABLE MATERIALS, FOAMED PRODUCTS, PLASTICS, FOAMED,

IDENTIFIERS: FIRE TESTS, AIRCRAFT ACCIDENTS

CARD ALERT: 415, 652, 804, 817, 914

The Proceedings contain 38 of the 70 papers that were presented at the Conference. Manuscripts of 16 papers were released and published in the open literature. The sessions covered the following subjects: impact of fire safety on the public; role of government in fire safety; role of organizations in fire safety; consumer product safety; fire and its legal aspects; medical care of fire victims; aircraft and fire safety; progress in the fire services; earthquakes and fire safety; progress in fire research; testing tools and techniques; large scale tests; human behavior in fires; fire toxicity; and polymers in fire situations. Some papers are presented in abstract form only. Selected papers are indexed separately.

ID NO.- EI770426976 726976

COATINGS FOR WEATHERED PLASTICS.

Whiteley, P.; Gardiner, D.
Build Res Establ, Garston, Hertfordshire, Engl

Weathering of Plast and Rubber, Int Symp, London, Engl, Jun 8-9 1976 Sponsored by Plast and Rubber Inst, Build and Constr Group, London, Engl, 1976 Pap D14, 12 p

DESCRIPTORS: (*POLYVINYL CHLORIDE, *Protective Coatings), (PLASTICS, REINFORCED, Weathering), (PAINT, Testing), ADHESION, (BUILDING MATERIALS, Plastics),

CARD ALERT: 421, 423, 539, 801, 813, 817

The increasing exterior use of plastics building components creates a need for paint systems suitable for on-site refinishing. A wide range of paints has been tested for durability and adhesion in natural weathering on polyvinyl chloride and glass reinforced polyester claddings. Loss of impact strength in the former caused by abrasion and/or overpainting is demonstrated and means by which it may be minimised are indicated. Attention is drawn to the need for careful choice of paint and the avoidance of normal paint stripping techniques or plastics substrates. Problems associated with the repainting of plastics coated metals are illustrated by an extensive failure of a nylon coating on steel window frames. 3 refs.

ID NO.- EI770426922 726922

IMPROVED CONSTRUCTION MATERIALS $EM DASH$ CUMYLPHENOL DERIVATIVES AND TITANIUM COUPLING AGENTS.

Seeman, D. J.; Sugerman, G.; Monte, S. J.
Kenrich Petrochem, Inc, Bayonne, NJ

SPE, East N Engl Sect, Reg Tech Conf: Plast in Build; Present Status and Future Prospects, Boston, Mass, Nov 9-10 1976 Sponsored by SPE, Plast in Build Div, Stamford, Conn, 1976 p 22-27

DESCRIPTORS: (*POLYMERS, *Fillers), TITANIUM COMPOUNDS, PHENOLS, VISCOSITY, (BUILDING MATERIALS, Plastics), (PLASTICS REINFORCED, Physical Properties),

IDENTIFIERS: COUPLING AGENTS

CARD ALERT: 415, 631, 804, 815, 817, 931

There are two methods for obtaining high solids and viscosity reduction in filled polymer resin systems. One approach is to lower the effective molecular weight of the resin system by substitution with a low molecular weight extender or diluent. This diluent should be compatible with the base polymer while not adversely affecting properties. The net result will be lower viscosity or higher solids. This paper describes derivatives of cumylphenol for consideration as the first approach. The second approach is to modify the inorganic so as to lower its surface energy and improve its compatibility with the polymer system. Titanate coupling agents form monomolecular layers on the surface of the inorganic. This results in viscosity reductions heretofore unobtainable while maintaining or improving physical properties. Test data are presented for filled rigid PVC and PVC plastics in which both coupling agents were used. Refs.

ID NO.- EI770426808 726808
WEATHERING PROCESS MORE COMPLEX THAN PREVIOUSLY IMAGINED.
Tipp, G.; Goodger, A.
Greater London Counc Sci Branch, Engl
Plast Rubber v 1 n 5 Oct 1976 p 203-204 CODEN: PLRUDI
DESCRIPTORS: (*PLASTICS, *Weathering), (BUILDING MATERIALS, Research), (RUBBER, SYNTHETICS, Weathering),
IDENTIFIERS: ARTIFICIAL WEATHERING
CARD ALERT: 415, 421, 423, 817
This is a report on international Symposium $left double quote$ The Weathering of Plastics and Rubbers $right double quote$ held in London, June 1976. Proceedings of papers delivered at the meeting are summarized. Topics covered included $EM DASH$ chemistry of the weathering process; photooxidation and photostabilization of nylon, ABS and polymer blends; measurement of weathering conditions in material and accelerated weathering; weathering of GFRP in adverse environments and under stress; weathering of PVC compounds; outdoor exposure of polyurethane elastomers in tropics; degradation of polychloroprene joints used in buildings; etc. The general feeling which emerged from the symposium was that, although the understanding of the weathering process may have advanced considerably in recent years, the result seems to have been to reveal a process even more complex than was previously imagined.

ID NO.- EI770426807 726807

DURABILITY OF PLASTICS IN BUILDING.

Lant, T. P. R.

Agrement Board, Hemel Hempstead, Engl

Weathering of Plast and Rubber, Int Symp, London, Engl, Jun 8-9 1976 Sponsored by Plast and Rubber Inst, Build and Constr Group, London, Engl, 1976 Pap F2, 10 p

DESCRIPTORS: (*PLASTICS, *Weathering), (BUILDING MATERIALS, Plastics),

IDENTIFIERS: DURABILITY OF PLASTICS

CARD ALERT: 415, 423, 817

The durability of a product is not only a function of the aging of the material from which it is made. It depends on all the environmental agencies to which it is subjected during service. This proposition is discussed in the context of the use of polymers in building. 3 refs.

ID NO.- EI770426779 726779

CREEP $EM DASH$ CONSIDERATIONS FOR PLASTICS IN BUILDING.

Crugnola, A.

Univ of Lowell, Mass

SPE, East N Engl Sect, Reg Tech Conf: Plast in Build; Present Status and Future Prospects, Boston, Mass, Nov 9-10 1976 Sponsored by SPE, Plast in Build Div, Stamford, Conn, 1976 p 68

DESCRIPTORS: (*PLASTICS, *Creep), (BUILDING MATERIALS, Plastics),

CARD ALERT: 415, 421, 817

This paper reviews recent development in the field of creep in plastics products used in structural applications. Effect of time, temperature, and surrounding atmosphere on the strain of plastics is discussed with the use of viscoelastic theory of creep.

ID NO.- EI770422444 722444

PLASTICS PENETRATION IN BUILDING.

Rosato, D. V.

Plast World, Boston, Mass

SPE, East N Engl Sect, Reg Tech Conf: Plast in Build; Present Status and Future Prospects, Boston, Mass, Nov 9-10 1976 Sponsored by SPE, Plast in Build Div, Stamford, Conn, 1976 p 99-105

DESCRIPTORS: (*BUILDINGS, *Prefabrication), (BUILDING MATERIALS, Plastics), INDUSTRIAL ECONOMICS,

CARD ALERT: 402, 415, 817, 911

This is a technological-economic survey of the plastics use in the combustion buildings. The building industry occupies an important place in the business of plastics production. About a quarter of all plastics produced find their way into the building-construction industry. They have steadily moved into the large, profitable and all-important business of building. Plastics are an indispensable constituent in building construction. They meet their needs and provide versatility in properties. Plastics supplement the offering available to the architect. Included are fabricated elements combining plastics with other materials. The biggest part of plastics employed in building is for nonstructural application, such as tubing and piping, flooring, paneling, wire insulation, acoustic and thermal insulating materials, adhesives, sealing compounds, protective and decorative coatings, light fittings, and finishes. Only a small proportion is used for load-bearing elements, mostly in combination with other building materials.

ID NO.- EI770422437 722437

AND NOW FOR THE REALLY TOUGH JOBS IN BUILDING AND CONSTRUCTION.

Anon

Mod Plast v 54 n 1 Jan 1977 p 38-40 CODEN: MOPLAY

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (PLASTICS PRODUCTS, Mechanical Properties), (POLYVINYL CHLORIDE, Extrusive), (PLASTICS, FOAMED, Processing), PIPE, PLASTIC, MARKETING,

CARD ALERT: 415, 421, 619, 816, 817, 911

This paper reviews new development in the use of plastics solids and plastics foam in construction applications with emphasis on the trend for the future. It is pointed out that available in 1977 will be new panel composites, materials for pipe and profiles, wood-replacement options through foam molding and extrusion, and other materials and systems that improve the traditional cost-performance advantages of plastics. These innovations will tend to be not glamorous but practical and problem-specific $EM DASH$ a good way to describe how the role of plastics is now viewed in construction. The survey is presented under headings $EM DASH$ rigid vinyls advance on all fronts; panels and whole structures; high performance pipe resins. Statistical data for plastic uses in specific construction applications in 1975 and 1976 are tabulated.

ID NO.- EI770320929 720929

NEW PRODUCT $EM DASH$ STRUCTURED NONWOVEN FABRIC LAMINATES.

Damiani, Mario

Montefibre, Milan, Italy

Nonwoven Technol $EM DASH$ Challenges and Achiev, Tech Symp, 4th, Atlanta, Ga, Mar 2-3 1976 Sponsored by INDA (Int Nonwovens and Disposables Assoc), New York, NY, 1976 p 173-184

DESCRIPTORS: (*TEXTILES, *Nonwovens), LAMINATED PRODUCTS, PLASTICS LAMINATES, PHENOLIC RESINS, PAPER, BUILDING MATERIALS,

IDENTIFIERS: KRAFT PAPER

CARD ALERT: 819, 816, 817, 811, 415

Manufacture, main characteristics and applications of a new product, structured nonwoven fabric laminates, are detailed. The product, on one side, is a thick needlepunched nonwoven fabric and, on the other, a normal kraft paper and phenolic resin laminate. This new concept, which consists of combining the components during the laminate manufacturing process, is a considerable innovation. The product has already found two important applications: prefabricated buildings and furnishings in general.

ID NO.- EI770319838 719838

FOAM TECHNOLOGY OPENS NEW ROUTES TO LOADBEARING BUILDING PANELS.

Anon

Mod Plast v 53 n 12 Dec 1976 p 50-52 CODEN: MOPLAY

DESCRIPTORS: (*SANDWICH STRUCTURES, *Manufacture), PLASTICS, FOAMED, POLYURETHANES, (BUILDING MATERIALS, Plastics), (BEAMS AND GIRDERS, Design), COMPOSITE MATERIALS,

CARD ALERT: 415, 816, 817

This is a report on some European advances on the continuous production of sandwich structures based on polyurethane or PS foams cores and facings made of plastics sheets or such conventional materials like plywood, particle boards, asbestos cement, etc. Design details of production lines are given and applications for loadbearing panels in the construction industry are indicated.

ID NO.- EI770316661 716661

CONTRIBUTION A LA RESISTANCE CHIMIQUE DES RESINES EPOXYDES CHARGEES ET LEUR CONTROLE. $left bracket$ Contribution to the Chemical Resistance of Loaded Epoxy Resins and Their Control $right bracket$.

Ettel, W. P.; Schulze, W.; Storm, O.
Hochsch fuer Bauwes, Leipzig, E Ger

Mater Constr Mater Struct v 9 n 53 Sep-Oct 1976 p 315-322 CODEN: MCMSBP

DESCRIPTORS: *EPOXY RESINS, CHEMICAL REACTIONS, (BUILDING MATERIALS, Plastics),

IDENTIFIERS: CHEMICAL RESISTANCE

CARD ALERT: 802, 815, 817

The durability of filled epoxy resins used in building industry has been tested. Lyes, organic and inorganic acids different concentration, solvents and fuels have been used as corrosive substances. With the corrosive attack of these substances the swelling behavior of the epoxy resins plays a fundamental part. The physical and chemical processes taking place have been analyzed. 12 refs. In French with English abstract.

ID NO.- EI770106425 706425

HOURLY AND MONTHLY VARIATIONS IN SURFACE TEMPERATURE OF OPAQUE PVC DURING EXPOSURE UNDER CLEAR SKIES.

Yamasaki, R. S.; Blaga, A.

Natl Res Council of Can, Ottawa, Ont

Mater Constr Mater Struct v 9 n 52 Jul-Aug 1976 p 231-242 CODEN: MCMSBP

DESCRIPTORS: *STRUCTURAL PANELS, POLYVINYL CHLORIDE, (BUILDING MATERIALS, Plastics), TEMPERATURE MEASUREMENT,

CARD ALERT: 408, 415, 817, 931, 944

To characterize weather as it affects plastics, measurements of surface temperature of opaque PVC panels subjected to outdoor exposure at five orientations in Ottawa, Canada, have been taken hourly for a year. Readings taken during Clear Hour periods, both day and night, have been selected, and for each panel the corresponding average daily surface temperature-time curve for each month was determined. 21 refs.

ID NO.- EI770105005 705005
GUIDELINES FOR BETTER STRUCTURAL FOAM.
Miller, Bernie
Plast World v 34 n 9 Sep 1976 p 28-33 CODEN: PLAWA4
DESCRIPTORS: (*PLASTICS, FOAMED, *Structural Application), (BUILDING MATERIALS, Plastics),
CARD ALERT: 817, 816, 415

As structural foam moves into larger and more highly engineered applications, quality and uniformity become increasingly vital. This article shows how emerging technology provides a clearer picture of the design and process variables that control the quality of structural foam, and points the way to consistent, reliable parts. While the first section of the article explores the qualitative effects of the key process and design parameters on foam quality, the second section deals with another aspect of the problem: how processing conditions and material selection affect the design properties of the molded foam.

ID NO.- EI761280152 680152

DIAMOND MACHINING OF GLASS-FIBRE REINFORCED FACING SLABS.

Groebner, J.
Flachglas, Weiden, Ger

Ind Diamond Rev Sep 1976 p 332-333 CODEN: INDRA9

DESCRIPTORS: (*CUTTING TOOLS, *Diamond), (PLASTICS, REINFORCED, Machining), (SAWS, Diamond), (POLYESTERS, Machining), (BUILDING MATERIALS, Plastics),

CARD ALERT: 605, 606, 482, 816, 415, 817

This article from Germany describes sawing and drilling operations on GRP facade slabs whose surface is decorated with crushed marble. It is shown that the use of diamond tools, compared with conventional tools, produces significant cost savings in both dry and wet machining.

ID NO.- EI761279317 679317
RESIN ANCHORS.
Beveridge, R. L. W.
Civ Eng (Lond) Jul-Aug 1976 p 71, 73, 75 CODEN: CVEGA5
DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), POLYESTERS,
IDENTIFIERS: RESIN ANCHORS
CARD ALERT: 415, 817
Application and performance criteria of polyester resin anchors are discussed by examples from the point of view of improved speed and economy to construction operations. 3 refs.

ID NO.- EI761279316 679316

APPLICAZIONI STRUTTURALI NELL'EDILIZIA. $left bracket$ Structural Applications of Plastics in Construction $right bracket$.

Schwabe, Amtor

Ist Tedesco per le Mat Plast nell'Edilizia, Italy

Mater Plast Elastomeri n 5 May 1976 p 356-367 CODEN: MPELAK

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (CONSTRUCTION INDUSTRY, Federal Republic of Germany), (PLASTICS INDUSTRY, Federal Republic of Germany),

CARD ALERT: 415, 817, 405

In this article, a well-known European expert traces the inroads made by plastics into the building sector during the past few years. In the past 20 years, the value of plastics fabricated products destined for the West German building industry has almost doubled. In 1975, this value was put at DM6. 072 million by the German Institute for Plastics in Construction (IBK). The biggest percentage of this total was accounted for by the following sectors; floor coverings, PVE and polyethylene tubing, plastics laminates, rigid expandable materials, transparent sheets, sheeting for waterproofing and roofs, skylight domes. Several structural applications of plastics in construction are detailed, and the use of plastics in building in Europe is presented in tabular form for the years 1970-1974. In Italian.

ID NO.- EI761176430 676430

MORE REALISTIC TESTING OF SMOKE GENERATION.

Meisters, Marts

Celanese Plast Co, Summit, NJ

Plast Eng v 32 n 8 Aug 1976 p 49-51 CODEN: PLEGBB

DESCRIPTORS: (*PLASTICS, *Combustion), MATERIALS TESTING APPARATUS, (BUILDING MATERIALS, Plastics), (SMOKE, Testing),

IDENTIFIERS: SMOKE GENERATION

CARD ALERT: 415, 421, 422, 521, 804, 817

The smoke generated when a building burns is often the most hazardous product of combustion. One of the major threats is light obscuration, which impairs vision and either hinders or prevents escape from the fire itself. Accordingly, construction materials must undergo smoke-generation tests, and building costs exclude materials which produce too much smoke during combustion. These laboratory tests, however, cannot duplicate real-life situations, so a movement to create more realistic experimental programs, especially in the plastics industry, has been underway. This paper describes a new developed smoke test chamber and its operation procedure. It is pointed out that since samples are not always burned completely in conventional smoke density chamber tests, the light-obscuration data thus obtained is often misleading. The new technique that burns the entire sample and keeps molten material from dripping produces more reliable results. Test data are tabulated and evaluated.

ID NO.- EI761175244 675244

FIRE RETARDANT ANALYSIS OF AN FRP COMPOSITE BEFORE AND AFTER THE TUNNEL TEST.

Fountain, Roger; Amembal, Amar
Bell Aerosp Co, Buffalo, NY

J Fire Retardant Chem v 3 n 1 Feb 1976 p 22-33 CODEN: JFRCDQ
DESCRIPTORS: (*MATERIALS, *Fire Resistance), (BUILDING MATERIALS, Plastics), COMPOSITE MATERIALS,
CARD ALERT: 817, 914

Two defined FRP composite systems used in bathroom fixture applications were subjected to the ASTM E-84 Tunnel Test. The materials contained flame retardants which were measured via elemental analysis before and after burning the composite in the tunnel. Comparisons were made between (a) the manner in which the phosphorus and chlorine elements were distributed and consumed by burning and (b) the type of analyses (surface or bulk). The two composites had different structural reinforcement and hence different burning rates. 6 refs.

ID NO.- EI761070383 670383
WHAT'S RIDING ON THE SKATEBOARD BOOM.
Anon
Mod Plast v 53 n 7 Jul 1976 p 38-39 CODEN: MOPLAY
DESCRIPTORS: *SPORTING GOODS, (BUILDING MATERIALS, Plastics), PRODUCT DESIGN,
IDENTIFIERS: SKATEBOARDS
CARD ALERT: 601, 817

The surface facts are that rigid plastics platforms (replacing wood) have not only played a key role in reviving the moribund skateboard industry but, along with higher-performance plastics wheels, have also helped to upgrade the product from a child's faddish plaything to a legitimate sporting-goods item. The deeper significance to processors generally is that the plastics skateboard platform has become the proving ground for structural design that satisfies a demanding set of requirements: thin-wall section, light weight, a balance of stiffness and flexibility, and the ability to withstand $EM DASH$ with a great deal of repeatability $EM DASH$ the rigors of suddenly applied high torque and jolting impact. Plastics used in skateboard-platform applications include: polyurethanes; ABS resins; polycarbonates; and acrylics.

ID NO.- EI761069206 669206

WEATHERING AND APPLICATION OF PLASTICS.

Crowder, John R.

Chem Ind (London) n 8 Apr 17 1976 p 342-343 CODEN: CHINAG

DESCRIPTORS: (*PLASTICS, *Weathering), (BUILDING MATERIALS, Plastics), (PLASTICS, REINFORCED, Degradation),

CARD ALERT: 415, 421, 817

This paper discusses some aspects of weather resistance of plastics used in construction building applications. Particular attention is given to the photodegradation of GRP cladding panels exposed to sunlight, moisture, atmospheric oxygen and temperature. Because GRP can have a high strength-to-weight ratio it can be used structurally, but there is only inadequate knowledge of its performance when exposed to the weather under stress over long periods, so that uneconomic over-design is often employed for GRp structures. Outdoor weathering trials are normally carried out unstressed but GRP specimens exposed under tensile stress will provide long-term data for more satisfactory structural design in GRP. Short-term mechanical tests on specimens retrieved after exposure are used to follow changes in the material. The evidence after only two years is that, unlike stress-corrosion effects in metals, the additional stress does not have a major effect in promoting weathering breakdown. 5 refs.

ID NO.- EI761069172 669172

PROGRESS IN TOXICITY TESTING FOR PLASTICS COMBUSTION PRODUCTS.

Carroll, Jerome P.
Soc of the Plast Ind, Inc

Pac Tech Conf and Tech Disp (PACTEC '75), 1st Annu, Proc, Las Vegas, Nev, Sep 16-18 1975 p 205. Sponsored by SPE, West Sect (Adv in Plast Technol, 1st Annu), Greenwich, Conn, 1975

DESCRIPTORS: (*PLASTICS, *Combustion), (CARBON MONOXIDE, Toxicity), (BUILDING MATERIALS, Plastics), MATERIALS TESTING,

IDENTIFIERS: COMBUSTION PRODUCTS

CARD ALERT: 402, 415, 423, 521, 802, 817

This is a summary of a paper which discusses results of recent research, the difficulties of hazard analysis in relating the research to actual fire situations, consideration of options in the use of various building materials, and possible courses for future testing programs.

ID NO.- EI760963695 663695

NEW MATERIALS, STRUCTURES AND SHELTER TECHNOLOGY, LARGE AREA ENCLOSURES.

Forbes, Fred

Am Astronaut Soc Sci Technol Ser v 39 1976 on Environ Control and Agri-Technol, incl Proc of the Conf on Controlled Environ-Food Technol, Morrilton, Ark, Jul 25-27 1969 p 153-187 CODEN: AASTBE

DESCRIPTORS: (*STRUCTURAL DESIGN, *Light Weight), (BUILDING MATERIALS, Plastics), AEROSPACE ENGINEERING, (SPACE VEHICLES, Life Support Systems), (PLASTICS, Agricultural Applications),

CARD ALERT: 408, 415, 655, 817, 821, 901

This discussion presents a great deal of information on new materials, structural design, shelter technology, and large area covers. The panelists demonstrate the feasibility of the existing technology to cover large areas with thin films or plastics and enclose an environment with the appropriate control systems managing the temperature and humidity. Low cost inflatables and similar structures are compared with conventional large-scale structures on an economic basis.

ID NO.- EI760962430 662430

STRESS RELAXATION STUDIES OF POLY(VINYL CHLORIDE) SIDING BY THERMOMECHANICAL ANALYSIS.

Changfoot, J.; Dickson, A. G.; Noel, F.; Stark, W. M.
Esso Chem Can, Sarnia, Ont

SPE Annu Tech Conf, 34th, Proc, Atlantic City, NJ, Apr 26-29 1976 p 42-44. Publ by SPE (Tech Pap v 22), Greenwich, Conn, 1976

DESCRIPTORS: (*POLYVINYL CHLORIDE, *Stresses), (BUILDING MATERIALS, Plastics), MATERIALS TESTING, THERMOANALYSIS, (STRESSES, Analysis), MATHEMATICAL TECHNIQUES,

IDENTIFIERS: STRESS RELAXATION, PVC SIDINGS, THERMOMECHANICAL ANALYSIS

CARD ALERT: 408, 415, 421, 801, 817, 921

Results of an experimental study are presented which show that thermal recovery of stresses induced during the production of horizontal PVC siding causes shrinkage and surface distortion at elevated temperatures. Shrinkage values of PVC siding as measured by the thermomechanical analysis method at 82 $degree$ C were in good agreement with values determined by existing specification methods. Furthermore, the TMA provided a convenient method for following the shrinkage process up to 500 h. Results show that the rate and extent of shrinkage decreases with decreasing temperature. Concurrent with shrinkage in the horizontal direction of the siding an expansion of the siding in the transverse direction occurs. Shrinkage studies showed that 95% of the induced stresses in siding could be relaxed if annealed at a temperature of 90 $degree$ C for 2. 6 minutes. The relationship between the fraction of stresses removed at different temperatures could be useful in the design of cooling equipment. It was also shown that the strain-time relationships at different temperatures could be reduced by the Williams Landel and Ferry equation. The theoretical and experimental values of the shift factor were in good agreement above the glass transition temperature. 4 refs.

ID NO.- EI760962426 662426

VINYL DRESSES UP FOR NEW ERA IN SIDING.

Martino, Robert

Mod Plast v 53 n 6 Jun 1976 p 34-37 CODEN: MOPLAY

DESCRIPTORS: (*POLYVINYL CHLORIDE, *Physical Properties), (BUILDING MATERIALS, Plastics), (PLASTICS, Coloring),

IDENTIFIERS: SIDING

CARD ALERT: 402, 415, 817, 931

In its dozen-year market history, vinyl siding has prettified and protected about three-quarters of a million homes. But all that now seems like prelude. A new generation of richly colorful siding will put many times that number on the best-dressed list. This will be achieved mainly through coextrusion, or some other technique that makes deep-color siding practicable and affordable. Already the wave is forming. After years of development by suppliers and extruders, on the horizon are the first deep-color panels $EM DASH$ walnut, avocado, brick red, barn red, and others $EM DASH$ and coextrusion is the key to all of them. This report contains much information on processing technology, formulations, properties and performance of PVC sidings. Forecast for the future development is included.

ID NO.- EI760959889 659889

FIBRES IN CIVIL ENGINEERING.

Anon

Shirley Inst, Cotton Silk and Man-Made Fibres Res Assoc, Manchester,

Fibres in Civ Eng, Shirley Inst Conf, Pap, Jun 18 1974 Publ by Shirley Inst, Cotton Silk and Man-Made Fibres Res Assoc (Shirley Publ S18), Manchester, Engl, 1975, 54 p

DESCRIPTORS: *FIBERS, NONTEXTILE, CIVIL ENGINEERING, BUILDING MATERIALS, STRUCTURAL DESIGN, CONCRETE REINFORCEMENTS, PLASTICS,

CARD ALERT: 901, 412, 415, 408, 405, 817

The volume contains five papers presented at the Conference. The topics covered are: prospects for fiber reinforcement in civil engineering materials; fibers as reinforcement in structural engineering; glass-fiber-reinforced cement; carbon-fiber-reinforced cement; and general design considerations for fiber-reinforced materials used in monocoque constructions.

ID NO.- EI760855559 655559
METAL DECK ROOFS AND FOAMED PLASTIC INSULATION.
Anon
Constr Specifier v 29 n 5 May 1976 p 47-48, 50, 52-53 CODEN: COSPAJ
DESCRIPTORS: (*ROOFS, *Insulation), (BUILDING MATERIALS, Plastics), PLASTICS, FOAMED,
CARD ALERT: 402, 413, 817
A report on the extensive test programs Factory Mutual has conducted on insulated metal roof deck and foamed plastic building insulation. The tests have produced new information leading to the development of adequate protection standards.

ID NO.- EI760855023 655023

DIE REAKTIVHARZE DER SIKA. $left bracket$ Reactive Resing of Sika $right bracket$.

Kelterborn, P.; Rutz, R.
Sika, Zurich, Switz

Kunstst-Plast v 23 n 4 Apr 1976 p 8-21 CODEN: KUPLAK

DESCRIPTORS: (*POLYMERS, *Reactions), (CHEMICAL REACTIONS, Crosslinking), (EPOXY RESINS, Curing), (BUILDING MATERIALS, Plastics), (PLASTICS INDUSTRY, Switzerland), ADHESIVES,

IDENTIFIERS: REACTIVE RESINS

CARD ALERT: 415, 802, 815, 817

This report describes polymers, produced by one of Swiss companies, which found application in construction industries. All the polymers are highly reactive, crosslinkable and fast hardening. Most of them are based on epoxy resins. They are particularly suitable for repair work in bridges, roads, building structures, etc. Examples of repair works done with Sika reactive resin formulations (adhesives and binders) are illustrated. In German.

ID NO.- EI760852425 652425

PRUEFUNGSKRITERIEN FUER NICHT TEXTILE BODENBELAEGE. $left bracket$ Test Criteria for Non-Textile Floor Coverings $right bracket$.

Anon

Kunstst-Plast v 23 n 4 Apr 1976 p 24-25 CODEN: KUPLAK

DESCRIPTORS: (*FLOORS, *Testing), (MATERIALS TESTING, Standards), (PLASTICS INDUSTRY, Switzerland), (BUILDING MATERIALS, Plastics),

IDENTIFIERS: FLOOR COVERINGS

CARD ALERT: 402, 421, 423, 817, 902

This is a specification list for testing materials designed for resilient floor coverings. This specification has been prepared by the Society of Plastics Industry and Construction Building Industry in Switzerland. All aspects of materials performance testing are covered. In German.

ID NO.- EI760850867 650867

POLYMER IMPREGNATED HARDENED CEMENT PASTES AND MORTARS.

Clifton, James R.; Fearn, James E.; Anderson, Erik D.
NBS, Washington, D. C.

Natl Bur Stand Build Sci Ser n 83 Apr 1976, 21 p CODEN: BSSNBV

DESCRIPTORS: (*CEMENT, *Additives), MORTAR, (CONCRETE CONSTRUCTION, Plastics Applications), POLYMERS, BUILDING MATERIALS,

IDENTIFIERS: POLYMER IMPREGNATION, POLYMER IMPREGNATED CEMENT, CEMENT PASTES, POLYMER IMPREGNATED MORTAR

CARD ALERT: 405, 412, 815, 817

Polymer impregnated hardened cement pastes and mortars have been prepared and their properties compared to those of unimpregnated specimens. Specimens were made by impregnating, under pressure, dried and evacuated precast hardened cement pastes and mortars with methyl methacrylate, which was subsequently thermally polymerized. The effects of the microstructure of the cement pastes and mortars on the performance of polymer impregnated cement pastes and mortars were investigated using specimens with a wide range of porosities which were prepared by varying the water to cement ratio and the curing times prior to impregnation. The properties of impregnated and unimpregnated specimens were investigated by: scanning electron microscopy; porosity determinations; fracture mechanics studies; and strength determinations. 53 refs.

ID NO.- EI760850762 650762

LOW SMOKE AND FLAME MATERIALS FOR CONTROLLING NOISE IN ARCHITECTURAL APPLICATIONS.

Brueggemann, Walter H.; DeFranco, Paul J.
Ferro Corp Tech Cent, Independence, Ohio

Am Chem Soc Div Org Coat Plast Chem Prepr v 36 n 1 1976, for 171st Meet, New York, NY, Apr 5-9 1976 p 293-301 CODEN: ACOCAO

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (PLASTICS, Fire Resistance), SOUND INSULATING MATERIALS, SMOKE ABATEMENT,

CARD ALERT: 413, 451, 751, 817, 914

This paper gives information about materials which have been developed for controlling noise whose impact on human life is of increasing concern and this impact is present as loss of hearing but also present are more subtle occurrences, such as speech privacy, changes in work habits, production rates. etc. Materials for attenuating noise are available. Use of these materials for architectural applications requires consideration of hazards to human life. The three new developments discussed here attempt to show what can be done. The materials discussed are commonly referred to as isolators, dampers, barriers and absorbers. Each of these types of materials provide noise reduction in the system of source-path-receiver. 5 refs.

ID NO.- EI760850761 650761

KUNSTSTOFFE HOECHST IM HOCH- UND TIEFBAU. $left bracket$ Hoechst Plastics in the Construction Industry $right bracket$.

Roder, Hans Erich

Hoechst, Frankfurt AM, Ger

Kunstst-Plast v 23 n 4 Apr 1976 p 30-32 CODEN: KUPLAK

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (PLASTICS INDUSTRY, Federal Republic of Germany), (PLASTICS, Physical Properties), (HEAT INSULATING MATERIALS, Plastics), PIPE, PLASTIC,

CARD ALERT: 413, 415, 619, 817, 931

This paper reviews various plastics materials, manufactured by the West German Company, Hoechst, which have found applications in construction buildings. The survey covers cellular plastics used as thermal insulations as well as plastics pipes used in modern heating systems and environmental protection. Test techniques used for evaluation of plastics designed for structural applications are also briefly reviewed. In German.

ID NO.- EI760850760 650760

RUN FOR THE SUN: SOLAR HEATING OPENS A VAST NEW CONSTRUCTION MARKET.

Anon

Mod Plast v 53 n 5 May 1976 p 52-55 CODEN: MOPLAY

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (HEATING, Solar), MARKETING,

CARD ALERT: 415, 643, 657, 817, 911

This paper discusses marketing aspects of solar heating industry whose potential is revolutionary for plastics products. Solar-heating components for which plastics have been or could be used are listed and discussed. They include $EM DASH$ flat-plate collector covers; concentrating collector mirrors and lens; light absorbing structures; collector frames and housings; insulation; pipe, storage and hot water tanks, etc. Advantages of plastics in solar heating are pointed out. Some future developments are indicated.

ID NO.- EI760850153 650153

STRUCTURAL ADHESIVES FOR BONDING WALL PANELS: A. QUALITY CONTROL REACTANTS RATIO.

Levine, Harold H.

Am Chem Soc Div Org Coat Plast Chem Prepr v 36 n 1 1976, for 171st Meet, New York, NY, Apr 5-9 1976 p 390-393 CODEN: ACOCAO

DESCRIPTORS: (*ADHESIVES, *Physical Properties), (EPOXY RESINS, Research), (BUILDING MATERIALS, Plastics), (BUILDING, Prefabrication),

CARD ALERT: 402, 415, 817, 912, 931

This paper describes a new developed adhesive system, based on epoxy resin, which found application in the production of building panels prefabricated in a plant by adhesively bonding two skins to a corrugation. A test program was carried out in order to evaluate the performance of the new adhesive in structural applications in experiments, effect of fillers, particularly pigments, on the aging behavior of adhesives, was investigated. Experimental data are tabulated and discussed in terms of practical considerations.

ID NO.- EI760743619 643619

PLUGGING THE GAPS IN BATHROOM GEAR.

Anon

Br Plast Rubber Feb 1976 p 34-35, 37 CODEN: BPRUDS

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (PLUMBING, Fixtures), (PLASTICS INDUSTRY, United Kingdom),

IDENTIFIERS: BATHROOM GEAR

CARD ALERT: 415, 619, 817

This paper reports on recent developments in the use of plastics in bathroom furniture, equipment and accessories. Emphasis is placed on modular bathroom containing such features as tubs, showers, basins, and bidets. Forecast for the future is included. Examples of plastics applications in bathroom gear are given; they are taken from United Kingdom, the Federal Republic of Germany and France.

ID NO.- EI760636965 636965

DER KUNSTSTOFF-VERBUNDVERBAU ALS NEUARTIGES AUSBAUSYSTEM FUER HOHLRAEUME UND BAUGRUBEN. $left bracket$ Use of Synthetic Material in Composite Construction as a Novel Structural System for Cavities and Excavation $right bracket$.

Rotter, E.; Habenicht, H.
Gebirgssicherung, Salzburg, Austria

Oesterr Ing-Z v 19 n 3 Mar 1976 p 84-89 CODEN: OSIZAN
DESCRIPTORS: *COMPOSITE MATERIALS, (BUILDING MATERIALS, Plastics), EXCAVATION,
IDENTIFIERS: COMPOSITE CONSTRUCTION
CARD ALERT: 405, 415, 502, 817
2 refs. In German.

ID NO.- EI760636523 636523
KUNSTSTOFFEN $EM DASH$ REDDING VOOR DE ARME, ONBEHUISDE WERELDBEVOLKING? $left bracket$ Plastics $EM DASH$ A Rescue for Poor, Homeless World Populations $right bracket$.
van Giessen, J. H.
AVIO-FOKKER, Ypenburg
Plastica v 29 n 3 Mar 1976 p 81-88 CODEN: PLASAQ
DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), INDUSTRIAL ECONOMICS,
IDENTIFIERS: PLASTICS SHELTERS
CARD ALERT: 415, 817, 911

The explosion of the population in this world leads, especially in the developing countries, to an increasing shortage in houses. Plastics $EM DASH$ in general $EM DASH$ offer properties that are required in building, in combination with mass-production techniques. They could help to bring relief in a relatively short period and therefore should play an important role. Examples of applications and future possibilities of plastics in the construction of shelters are discussed. 10 refs. In Dutch with English abstract.

ID NO.- EI760533540 633540

EINFLUSS VON FUELLSTOFFKENNWERTEN AUF DIE EIGENSCHAFTEN VON KUNSTHARZBESCHICHTUNGSMASSEN FUER DAS BAUWESEN. $left bracket$ Effect of Filler Characteristics on the Properties and Performance of Plastics-Based Coating Materials Used in the Construction Industry $right bracket$.

Schulze, Walter; Wolf, Hans Dieter
Hochsch fuer Bauwes, Leipzig, E Ger

Plaste Kautsch v 22 n 12 Dec 1975 p 965-968 CODEN: PLKAAM

DESCRIPTORS: (*PLASTICS, *Fillers), (BUILDING MATERIALS, Plastics), (BUILDINGS, Insulation), (QUARTZ, Physical Properties), (PROTECTIVE COATINGS, Physical Properties),

IDENTIFIERS: FILLERS

CARD ALERT: 402, 413, 482, 817, 931

This paper is concerned with the optimal physical values such as particle size and particle size distribution of various fillers used in insulating materials for building applications. Materials discussed are quartz, dolomite, talcum, calcium carbonate, etc. Effect of specific surface (porosity), moisture contents and thermal expansion coefficient of fillers and the usability of plastics-based compounds are also discussed in this report. 4 refs. In German.

ID NO.- EI760529242 629242
NON-TURF CRICKET PITCHES.
Nelms, R. P.
RAPRA Members J v 3 n 5 Sep-Oct 1975 p 75-76 CODEN: RPMJA7
DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), STADIUMS, SURFACES, RUBBER,
IDENTIFIERS: CRICKET PITCHES
CARD ALERT: 402, 415, 817, 818

Over the centuries the game of cricket has been played on many non-turf surfaces; most of them inappropriate. Although the turf cricket pitch is recognised as the finest, some would say the only surface on which to play the game, interest in non-turf pitches is increasing with the rise of maintenance and labor costs. RAPRA has been asked to prepare a specification for non-turf pitches and eventually act as a test house. This article gives a background to the project. Plastics and rubbers are considered as main components of new cricket pitches. 8 refs.

ID NO.- EI760426666 626666

PVC PROFILE EXTRUSIONS FOR THE CONSTRUCTION INDUSTRY.

Katz, Harry

Variform Plast Inc

SPE, Chicago Sect, Reg Tech Conf: PVC $EM DASH$ A Versatile and Safe Workhorse, Prepr, Rosemont, Ill, Oct 21-22 1975 10 p. Publ by SPE, Greenwich, Conn, 1975

DESCRIPTORS: (*POLYVINYL CHLORIDE, *Extrusion), PLASTICS PRODUCTS, (BUILDING MATERIALS, Plastics),

CARD ALERT: 415, 816, 817

PVC has been the major plastic material used in construction applications. Some of the reasons for this widespread usage are examined. The profile extrusion applications are discussed covering the broad range of building products. Exterior as well as interior applications, residential, commercial, institutional and agricultural uses are cited. The future of PVC profile extrusions in construction is explored, with emphasis on what may be required to further stimulate the growth of this material in building products.

ID NO.- EI760426495 626495

REINFORCED PLASTIC BRIDGES $EM DASH$ A FEASIBILITY STUDY.

Rondal, J.; Vidouse, F.

Univ of Liege, Belg

Reinf Plast Congr, Proc, Brighton, Engl, Nov 12-14 1974 p 125-132. Publ by Br Plast Fed, Reinf Plast Group (53/9), London, Engl, 1974

DESCRIPTORS: (*PLASTICS, REINFORCED, *Structural Application), (BUILDING MATERIALS, Plastics), GLASS FIBERS, (COMPOSITE MATERIALS, Mechanical Properties), PRODUCT DESIGN,

CARD ALERT: 415, 421, 812, 817

This paper reviews properties and structural applications of composites based on GFRP. Particular attention is given in this survey to design considerations with emphasis on the necessity of uses of design methods for terogeneous and anisotropic structures. An introduction is followed by a discussion of the following subjects $EM DASH$ home applications of reinforced plastics showing their properties; principal characteristics and comparison with other materials; design of GFRP; bridges and pedestrain bridges in GRP; and conclusive remarks. Many structural elements made of GRP are illustrated. 27 refs.

ID NO.- EI760426394 626394

PRODUCTS OF COMBUSTION OF (PLASTICS) BUILDING MATERIALS, SYMPOSIUM, PAPERS, 1973.

Anon

Armstrong Cork Co, Lancaster, Pa

Prod of Combust of (Plast) Build Mater, Symp, Proc, Pap, Lancaster, Pa, Mar 26-27 1973 Publ by Armstrong Cork Co, Lancaster, Pa, 1973, 81 p

DESCRIPTORS: (*PLASTICS, *Combustion), (BUILDING MATERIALS, Plastics), SMOKE ABATEMENT, ENVIRONMENTAL PROTECTION,

IDENTIFIERS: SMOKE GENERATION

CARD ALERT: 415, 451, 521, 817, 901, 914

This volume contains proceedings of 13 papers delivered at the meeting which was organized in order to confront the fire-research problems directly, and to set a course for future research in the field of fire and smoke hazards related to plastics. Among others the main topics include $EM DASH$ toxicity and thermal degradation products of plastics; products of combustion of building materials. Analysis of the combustion products from wood and synthetic polymers, the fire protection; fire safety in urban housing. Some papers area accompanied by bibliographic data. Individual contributions are abstracted and indexed separately.

ID NO.- EI760424449 624449
LIFETIME MOBILE HOMES SET THE PACE FOR NEW PLASTICS GROWTH IN HOUSING.
Martino, Robert
Mod Plast v 53 n 2 Feb 1975 p 48-50 CODEN: MOPLAY
DESCRIPTORS: (*HOUSES, *Mobile), (BUILDING MATERIALS, Plastics), (BUILDINGS, Costs),
IDENTIFIERS: MOBILE HOMES
CARD ALERT: 402, 415, 817, 911
High-performance materials move into mobile homes, establishing practical cost/performance concepts that can be adapted to other construction markets. This report is presented under the headings $EM DASH$ new direction homes, new jobs for plastics; new insulating $EM DASH$ efficient, modular and safe; high-spec components for utility systems; and growth begins for large-part processing. Materials described in this review include $EM DASH$ structural foam, vacuum-formed sheet, and rigidized acrylic or ABS, and GFRP.

ID NO.- EI760422103 622103

VORGABE UND NACHKONTROLLE KRITISCHER DEHNUNGEN IN DER ANWENDUNG AUF THERMOPLASTISCHE BAUTEILE $EM DASH$ 6. $left bracket$ Determination and Final Control of Critical Strain in the Application of Thermoplastics Structural Components $EM DASH$ 6 $right bracket$.

Pohrt, J.

Bad Analin und Soda Fabr, Ludwigshafen, Ger

Gummi Asbest Kunstst v 28 n 12 Dec 1975, 6 p between p 850 and 859

CODEN: GAKSA2

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (PLASTICS, Mechanical Properties), (MATERIALS TESTING, Standards),

IDENTIFIERS: THERMOPLASTICS

CARD ALERT: 415, 421, 817

In this continuation of a series of articles on the evaluation of test results on structural parts made of thermoplastics materials, the author discusses some factors affecting damages and crack formations sustained under long-time stressing. Mechanisms of fracture, including the notch test and pressed ball test, are dealt with in detail. Techniques and evaluation of standard short-time test and long-time test according to DIN 53449 are described. 8 refs. In German.

ID NO.- EI760422102 622102

ANWENDUNG VON KUNSTSTOFFEN IM VORBEUGENDEN BRANDSCHUTZ. $left bracket$ Application of Plastics for Fire Prevention $right bracket$.

Dalhoff, W.; Spitzlei, H.; Johannson, G.

Gummi Asbest Kunstst v 28 n 10 Oct 1975, 6 p between p 654-664
CODEN: GAKSA2

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (PLASTICS, Flame Resistance), FIRE PROTECTION,

CARD ALERT: 415, 817, 914

General considerations of fire hazards related to the use of plastics in construction building applications are followed by a review of materials flammability tests employed in the Federal Republic of Germany, with emphasis on German standards. Results of a test program are presented in which extruded and cast acrylic glass samples were used in flammability experiments. Measuring data are compared with those obtained for polyester-based GFRP transparent materials. Test data are evaluated and discussed in terms of practical recommendations in regard to the possibility of use of acrylic glass in domes and building applications. 7 refs. In German.

ID NO.- EI760422101 622101
PRODUCTS OF COMBUSTION OF BUILDING MATERIALS.
Bihr, James E.
Int Conf of Build Off
Prod of Combust of (Plast) Build Mater, Symp, Proc, Lancaster, Pa, Mar 26-27 1973 p 42-45. Publ by Armstrong Cork Co, Lancaster, Pa, 1973
DESCRIPTORS: (*BUILDING MATERIALS, *Combustion), BUILDING CODES, FIRE PROTECTION, MATERIALS TESTING,
IDENTIFIERS: COMBUSTION PRODUCTS OF BUILDING MATERIALS
CARD ALERT: 402, 415, 451, 817, 902, 914

This paper is concerned with building code regulation related to materials used as finish materials. In 1961 the Code regulations were changed so that the tunnel test was utilized exclusively as the test standard for both interior finishes and for plastics. In adapting to the tunnel test, the regulations on toxicity, which were previously reserved for plastics, were extended to include all finish materials. A regulation on smoke density based on the tunnel test was also added for both finish materials and plastics. In each instance, the smoke-density limitation was in terms relating to wood, thus indicating that the smoke produced by the burning of untreated wood under the tunnel test represented an acceptable or practical maximum. The amount of finish materials that could be utilized in a building and, therefore, the amount of smoke that could be produced, was left entirely to the nature of the occupancy and the vagaries of the fire.

ID NO.- EI760422100 622100

PROBLEM OF SMOKE AND TOXIC COMPOUNDS IN BUILDING FIRES.

Tewarson, Archibald

Fact Mut Res Corp, Norwood, Mass

Prod of Combust of (Plast) Build Mater, Symp, Proc, Lancaster, Pa, Mar 26-27 1973 p 38-42. Publ by Armstrong Cork Co, Lancaster, Pa, 1973

DESCRIPTORS: (*BUILDING MATERIALS, *Combustion), (GASES, Toxicity), SMOKE ABATEMENT, MATERIALS TESTING,

IDENTIFIERS: BUILDING FIRES, SMOKE TOXICITY, COMBUSTION PRODUCTS TOXICITY

CARD ALERT: 415, 423, 451, 914, 931

This paper discusses some problems related to evaluation of toxicity of smoke and compounds generated in fires, particularly of plastics combustion products. In generating data on smoke and toxic compounds from plastics used or to be used in buildings and furnishings, one would like the following kept in mind: nature and concentration of toxic compounds, and rates of generation of smoke and toxic compounds. The generated data can be validated by real fires or on the basis of established modeling principles. One can then present results in terms of relative degree of danger. This can the formulate criteria for the control of dangerous materials from being used in buildings and furnishings. It is not very simple to generate information on smoke and toxic compounds in a form which can be used for safety precautions, such as time to safe exit, protection method against generated-fire products, time elapsed between actuation of a fire alarm and safe exit, or protection from smoke and toxic compounds as a result of application of fire-extinguishing or suppressing agents. The author presents some recommendations which should be followed in practice to diminish the problems encountered in fire of plastics materials.

ID NO.- EI760319732 619732

MONOMERICALLY PLASTICISED PVC ROOFING SYSTEMS.

Watson, C. D.
Dynamit-Nobel (UK) Ltd

Int Symp on Roofs and Roofing (ISRR), Proc, Brighton, Sussex, Engl, Sep 9-13 1974 v 1 Pap 33, 13 p. Sponsored by Soc of Chem Ind, London, Engl, 1974

DESCRIPTORS: (*ROOFS, *Polyvinyl Chloride), (BUILDING MATERIALS, Plastics),

IDENTIFIERS: FLAT ROOFS

CARD ALERT: 402, 817

The system is used in sealing flat roofs, and comprises a single waterproofing layer and a vapor check, both losse layed, in sheet form. The individual lengths are overlapped and solvent welded; the seams receive a further seal and T-joints are injected ro prevent capillary attraction. A covering of 50 mm of round gravel is then applied as ballast. The roofing sheet and the vapor check sheet are vapor permeable, the former more so than the latter, thus allowing the roof to breathe while ensuring that the thermal insulation is kepy dry. This material is exceedingly elastic to an extent that building movement can be no problem, and expansion joints re unnecessary.

ID NO.- EI760319714 619714

PRESENT STATE OF WATERPROOFING OF BUILDINGS USING SYNTHETIC POLYMERIC ROOFING SHEETS.

Totsuka, Terumi
Archit Inst of Jpn

Int Symp on Roofs and Roofing (ISRR), Proc, Brighton, Sussex, Engl, Sep 9-13 1974 v 1 pap 21, 9 p. Sponsored by Soc of Chem Ind, London, Engl, 1974

DESCRIPTORS: (*ROOFS, *Coverings), (BUILDING MATERIALS, Plastics),

CARD ALERT: 402, 415, 818

The various classes of such synthetic materials are reviewed in relation to applicable Japanese Standard Specifications. The defects occurring in roofs covered with such sheeting have been investigated by a Committee of Japanese Synthetic Polymer Roofing Sheet Association, and the causes have been analysed. The results of the survey and recommendations for avoiding such defects are given, with detail drawings to illustrate correct methods of fixing and finishing.

ID NO.- EI760319711 619711

ASSESSMENT OF PLASTICS SHEETS FOR WATERPROOFING ROOFS.

Martin, K. G.
CSIRO, Div of Build Res, Aust

Int Symp on Roofs and Roofing (ISRR), Proc, Brighton, Sussex, Engl, Sep 9-13 1974 v 1 Pap 10, 8 p. Sponsored by Soc of Chem Ind, London, Engl, 1974

DESCRIPTORS: (*ROOFS, *Coverings), (BUILDING MATERIALS, Plastics),
IDENTIFIERS: WATERPROOFING MEMBRANES, BUILT-UP ROOFING
CARD ALERT: 402, 817

The sheets are assessed in terms of mechanical properties in tension and the ability to retain these properties after having been exposed outdoors. Peel strengths have been determined to indicate the ability of the sheet to be lap-sealed, and some sheets have been fixed to a moving joint tester to assess the capability of the system to accommodate movement in the substrate. The results indicate that a number of systems offer promise of improved mechanical performance and durability compared to the conventional bituminous roofing membranes. Refs.

ID NO.- EI760319708 619708

LES REVETEMENTS D'ETANCHEITE DE TOITURES A BASE DE HAUTS POLYMERES EN FRANCE. $left bracket$ High Polymer Based Roof Coverings in France $right bracket$.

Farhi, E.; Chaize, A.

Cent Sci & Tech du Batim, Paris, Fr

Int Symp on Roofs and Roofing (ISRR), Proc, Brighton, Sussex, Engl, Sep 9-13 1974 v 1 Pap 42, 9 p. Sponsored by Soc of Chem Ind, London, Engl, 1974

DESCRIPTORS: (*ROOFS, *Coverings), (BUILDING MATERIALS, Plastics),

CARD ALERT: 402, 817, 411

High polymer based coverings have appeared on the market in France fairly recently (e. g. polyisobutylene, chlorosulphonated polyethylene and glass-reinforced polyesters). The properties of these materials are given and applications of these materials are described. More recently still, composite roofings have been developed, using bitumen and high polymers. The properties of these roofings are given as well as examples of their application in France. In French with English abstract.

ID NO.- EI760319115 619115
LARGE FOAM-MOLDED PARTS: 'BASIC SHAPE' OF THINGS TO COME.
Anon
Mod Plast v 53 n 1 Jan 1976 p 37 CODEN: MOPLAY
DESCRIPTORS: (*PLASTICS, FOAMED, *Molding), (BUILDING MATERIALS, Plastics),
IDENTIFIERS: STRUCTURAL FOAMS, LARGE MOLDED PARTS
CARD ALERT: 415, 817

The commercial debut of some large molded parts signals a new stage in the evolution of markets for structural foam. The parts are basic structural shapes $EM DASH$ panels and lineals in applications where extrusion, thermo-form/sprayup, or RP molding could have been used to advantage, but where still greater advantage was achieved with foam molding. Two large molding applications are discussed $EM DASH$ all-structural foam swimming pool, and door frames made of foamed high-impact PS which surpass wood in performance.

ID NO.- EI760314960 614960

HOCHPOLYMERE WERKSTOFFE IM BAUWESEN. $left bracket$ Polymeric Materials in Buildings $right bracket$.

Zimmer, Karlheinz

Tech Univ, Dresden, E Ger

Plaste Kautsch v 22 n 7 Jul 1975 p 575-579 CODEN: PLKAAM

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (PLASTICS INDUSTRY, German Democratic Republic), (SANDWICH STRUCTURE, Mechanical Properties), (DOMES AND SHELLS, Mechanical Properties), (BUILDINGS, Plastic Applications), PLASTICS, REINFORCED,

CARD ALERT: 402, 408, 415, 421, 817

This paper reports on recent advances in the use of polymers, particularly plastics, in building applications. Details are given related to design of sandwich structures, domes, shells, and other structural parts which are made of/with plastics or GRP. 7 refs. In German.

ID NO.- EI760211975 611975

THERMOPLASTISCHE POLYESTER ALS KONSTRUKTIONSWERKSTOFFE. $left bracket$ Thermoplastics Polyesters as Structural Materials $right bracket$.

Breitenfellner, F.
Ciba Geigy Marienberg, Ger

Kunststoffe v 65 n 11 Nov 1975 p 743-750 CODEN: KUNSAV

DESCRIPTORS: (*POLYESTERS, *Structural Application), (PLASTICS, Mechanical Properties), (BUILDING MATERIALS, Plastics), (PLASTICS, REINFORCED, Processing), GLASS FIBER,

IDENTIFIERS: THERMOPLASTIC POLYESTERS, POLYBUTYLENE TEREPHTHALATE

CARD ALERT: 415, 421, 812, 816, 817

Structural materials have, in recent years, been supplemented by thermoplastic polyesters. Of these, polybutylene terephthalate in particular has become popular for many industrial applications on account of its ease of processing and balanced range of properties. This partially crystalline material may be reinforced by means of short or long glass fibres as well as by glass beads. The article reports on the properties of PBTP materials reinforced in this manner. In German.

ID NO.- EI760209384 609384

STOICHIOMETRY OF CYCLOALIPHATIC EPIDE RESINS REACTED WITH PRIMARY AMINES.

McLean, P. D.; Scott, R. F.

Natl Res Counc Can Div Mech Eng Mech Eng Rep n 14450 Nov 1974, 32 p
CODEN: NRCMA4

DESCRIPTORS: *EPOXY RESINS, (BUILDING MATERIALS, Plastics), (PLASTICS, REINFORCED, Mechanical Properties),

CARD ALERT: 815, 817, 415, 421, 802

This report is a study of the stoichiometry and its effect on tensile properties of several five and six membered ring cycloaliphatic epide resins reacted with the primary amine methylene dianiline. The results showed that up to 100% excess of the amine could be used successfully. Possible reasons for this phenomenon are discussed. The plastics exhibited high strength, high elongation and were predominantly ductile at failure. Increased interest in these epides has resulted in applications as matrix materials for reinforcements such as glass, carbon and boron fibers or silicon carbide whiskers. 12 refs.

ID NO.- EI760104848 604848

DIFFUSION CONTROLLED COMBUSTION OF POLYMERS.

Holve, D. J.; Sawyer, R. F.
Univ of Calif, Berkeley

Symp on Combust, 15th Int, Proc, Tokyo, Jpn, Aug 25-31 1974 p 351-361. Publ by Combust Inst, Pittsburgh, Pa, 1975

DESCRIPTORS: (*POLYMERS, *Combustion), (BUILDING MATERIALS, Plastics),

CARD ALERT: 815, 521, 817

A theoretical and experimental study of polymer combustion in an opposed flow diffusion flame (OFDF) is presented. An algebraic formula is derived, expressing the burning rte as a function of the fluid mechanic and thermodynamic variables. Regression rate measurements of twelve commercial polymers as a function of oxyger concentration and oxidizer flowrate are reported. From these measurements and the theory, values of the Spalding transfer number, B, are derived and can serve as a useful flammability index of these materials. The OFDF technique also provides a quantitative method for evaluating the effectiveness of flame retardants. 28 refs.

ID NO.- EI760104807 604807

CRASTIN $EM DASH$ EIN NEUER KONSTRUKTIONSWERKSTOFF FUER DIE SPRITZGIESSVERARBEITUNG $EM DASH$ 1. $left bracket$ Crastin $EM DASH$ A New Engineering Material for Injection Molding $EM DASH$ 1 $right bracket$.

Brunner, Juerg
Ciba-Geigy, Basel, Switz

Kunstst-Plast v 22 n 9 Sep 1975 p 37-41 CODEN: KUPLAK

DESCRIPTORS: (*POLYESTERS, *Physical Properties), (PLASTICS, Molding), (PLASTICS PRODUCTS, Mechanical Properties), (BUILDING MATERIALS, Plastics), (PLASTICS, REINFORCED, Molding),

IDENTIFIERS: POLYETHYLENE TEREPHTHALATE, POLYBUTYLENE TEREPHTHALATE, THERMOPLASTICS

CARD ALERT: 415, 421, 816, 817, 931

This paper describes a family of terephthalate polyester molding materials produced in Switzerland, tradenamed $left double quote$ Crastin $right double quote$. They are based on two thermoplastic polyesters: polyethylene terephthalate and polybutylene terephthalate. The Crastin family encompasses 13 commercially available compounds divided into three groups $EM DASH$ nonreinforced polymers, short glass fiber reinforced plastics and special types. Extensive property and performance data are tabulated and plotted. Processing conditions are also dealt with and technological recommendations are included. In German.

ID NO.- EI760104720 604720
UNDERGROUND MARKET SURFACES: STRUCTURAL FOAM UTILITY ENCLOSURES.
Martino, Robert
Mod Plast v 52 n 11 Nov 1975 p 46-49 CODEN: MOPLAY
DESCRIPTORS: (*PLASTICS, FOAMED, *Marketing), (BUILDING MATERIALS, Plastics),
IDENTIFIERS: STRUCTURAL FOAMS, UTILITY ENCLOSURES
CARD ALERT: 415, 817

This is a report on recent development on the use of structural foam in construction building applications. Structural foam molders have discovered a broad utilities market for underground and aboveground enclosures that protect distribution equipment, and they are tooling up to capture it from metals and concrete. Assuming a post-recession average of two million new single-family and apartment units per year for the long run, the potential market for resins in foam enclosures could approach 100,000 tons/yr. in underground applications. The aboveground market could be as big. Several enclosures designed for various structural applications of structural foams are illustrated.

ID NO.- EI760104687 604687

NEUE KUNSTSTOFFE $EM DASH$ NEUE ANWENDUNGSMOEGLICHKEITEN. $left bracket$ New Plastics $EM DASH$ New Applications $right bracket$.

Mark, H. F.
Polytech Inst of NY, Brooklyn

Chem Ing Tech v 47 n 19 Oct 1975 p 783-787 CODEN: CITEAH

DESCRIPTORS: *PLASTICS, (BUILDING MATERIALS, Plastics), (AUTOMOBILE MATERIALS, Plastics),

CARD ALERT: 415, 662, 815, 817

The opening up of new areas for the use of plastics $EM DASH$ mainly as materials of construction in the building and automotive industries $EM DASH$ will be successful only if plastics having suitable mechanical and thermal properties can be developed. This can be accomplished by adopting three approaches: crystallization, crosslinking, and the use of nonflexible chain molecules. Simultaneous adoption of two of these approaches has already led to plastics having excellent properties. In German with English abstract.

ID NO.- EI760100823 600823

FLEXURAL BEHAVIOR OF STRUCTURAL SANDWICH PANELS.

Mears, David R.; Kim, Moon-Ki

Rutgers Univ, State Univ of NJ, New Brunswick

ASAE Pap, 68th Annu Meet, Univ of Calif, Davis, Jun 22-25 1975 Pap 75-4036, 18 p. Publ by ASAE, St. Joseph, Mich, 1975

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (MATERIALS TESTING, Elasticity),

IDENTIFIERS: FLEXURAL BEHAVIOR, STRUCTURAL SANDWICH

CARD ALERT: 415, 817, 422, 423

The flexural behavior of sandwich panels has been studied analytically and experimentally. Based on the results of these studies, simplified formulas which can be used for design are proposed. Equations illustrate analysis; tables are appended. 20 refs.

ID NO.- EI760100821 600821

LES DEFORMATIONS SOUS CHARGES DE COURTE ET LONGUE DUREE DES MELANGES A BASE DE RESINES EPOXYDES. $left bracket$ Deformation of Mixtures Having an Epoxy Resin Base Under Loads of Short and Long Duration $right bracket$.

Andries, S.; Stanescu, A.
Inst de Rech du Batiment, Bucharest, Rom

Mater Constr Mater Struct v 8 n 46 Jul-Aug 1975 p 279-290 CODEN: MCMSBP

DESCRIPTORS: *BUILDING MATERIALS, (CONCRETE CONSTRUCTION, Plastics Applications), EPOXY RESINS, (CONCRETE, Creep), SAND AND GRAVEL,

CARD ALERT: 405, 412, 483, 817

The research described was carried out to determine the behavior of loads of short duration (characteristic curves $sigma$ - $epsilon$) and of long duration (deformations due to creep) of mixtures prepared with two types of epoxy binders, of different composition (with or without solvent) and with quarry sand or ground sand (filler). The influence of variable parameters on deformation has been studied, in particular: the resin composition; the percentage of resin in the mixture; the maximum dimension of the sand-grain; the age of the material at the time of the test. On the deformations of the mixtures due to creep the effect of the unit force applied and of the high temperature in the middle of the test was observed. In French with English abstract.

ID NO.- EI751283884 583884

USE AND MARKET OPPORTUNITIES FOR PLASTICS IN THE ROOFING INDUSTRY.

Duchon, Karman; Parker, John S.

Tremco Inc, Cleveland, Ohio

SPE Tech Conf, 33rd Annu, Proc, Atlanta, Ga, May 5-8 1975 p 34-36. Publ by SPE, Greenwich, Conn, 1975

DESCRIPTORS: (*ROOFS, *Prefabricated), (BUILDING MATERIALS, Plastics), (COMPOSITE MATERIALS, Fire Resistance), (PLASTICS, REINFORCED, Flame Resistance), PLASTICS, FOAMED,

CARD ALERT: 402, 415, 817, 914

Although the use of plastics in roofing is increasing, little technical information on roofing systems is available to the plastic industry. The primary purpose of a roof is to protect us from the elements, but the functioning of a roof is a complex problem combining movement, aging, and weatherproofing. Roofs can be the traditional sloped roof, the relatively flat roof, or a modern complex hyperbolic paraboloid or folded shape. Sloped and complex shaped roofing presents minimum problems to waterproof, while the low slope or flat roof does create an installation and maintenance problem. Current architectural requirements are prescribing that most roofs are flat for all types of buildings. Flat roofing permits a lower cost construction, the use of the roof for other purposes, future expansion of a building and more efficient use of space. This paper is primarily concerned with the flat roof, the problems associated with it, and the uses of plastics in these roofs. Brief mentions are made to sloped and formed roofs. It is pointed out that plastics have the potential for providing much of the roof system of the future, but in order to meet the demands, engineering based on the past experiences is required and practical installation technique developed. Particular growth will be in insulation and in membranes.

ID NO.- EI751283883 583883

FOLDED PLATE ROOFS OF CORRUGATED PLASTICS SHEETS.

Har'El, Gershon

Technion, Isr Inst of Technol, Haifa

Int Assoc for Shell and Spat Struct, Int Symp on Prefabr Shells, Proc, Haifa, Isr, Sep 10-13 1973 v 2 Pap E-7 p 486-507. Publ by Int Assoc for Shell and Spat Struct, Tel Aviv, Isr, 1973

DESCRIPTORS: (*ROOFS, *Polyvinyl Chloride), (PLATES, Polyvinyl Chloride), (BUILDING MATERIALS, Research),

IDENTIFIERS: PREFABRICATION

CARD ALERT: 402, 415, 817, 408

The paper deals with the use of polyvinyl chloride sheets for the erection of spatial self supporting structures. The basic idea presented is the structural action and the possible and economical use of composite beams having corrugated webs instead of planar ones, acting as the sloped planes of folded structures. Results are presented from two experiments on full scale folded plate structures where prefabrication was also taken into consideration. 10 refs.

ID NO.- EI751176017 576017

EXTRUSION OF STRUCTURAL FOAM PROFILES BY THE CONTROLLED FOAM EXTRUSION PROCESS.

Kiessling, George C.

Ugine Kuhlmann of Am, Englewood Cliffs, NJ

SPE, Pioneer Val Sect, Reg Tech Conf: Struct Foam Molding and Extrusion, Tech Pap, Wakefield, Mass, Jun 11-12 1975 p 75-88. Publ by SPE, Greenwich, Conn, 1975

DESCRIPTORS: (*PLASTICS, FOAMED, *Extrusion), (BUILDING MATERIALS, Plastics), FURNITURE MANUFACTURE, (PLASTICS MACHINERY, Extruders), (PLASTICS INDUSTRY, Frame),

IDENTIFIERS: STRUCTURAL FOAM PROFILES

CARD ALERT: 415, 816, 817

Significant progress has been made in the development of applications for extruded structural foam thermoplastics using the controlled foam extrusion process originally invented in 1966 in France. This Celuka process is now covered by patents in 30 countries including the United States. Since 1968, licenses have been granted to 36 companies in 13 countries around the world. Considerable experience has been gained with a broad range of thermoplastics in this foam extrusion system in an ever increasing list of commercial and experimental applications. This paper discusses recent experience with this controlled foam extrusion (CFE) process for extruding structural foam profiles. The following topics are detailed $EM DASH$ description of the process; process features and control; applications in building and furniture; future applications; and prospects for future development. Economic information is included.

ID NO.- EI751171379 571379
MATERIALS COMPETE FOR AUTO MARKET.
Greene, Alice M.
Iron Age v 216 n 12 Sep 22 1975 p 37-40, 42-43 CODEN: IRAGAN
DESCRIPTORS: (*AUTOMOBILE MATERIALS, *Steel), (AUTOMOBILES, Fuel Economy), (BUILDING MATERIALS, Aluminum),
CARD ALERT: 415, 662, 545, 521, 541

A host of developmental programs now being carried out by the automotive industry are directed toward testing and evaluating new materials and older materials in new applications. The trend is toward lightweight materials which are beginning to challenge the traditional, in the pursuit of the fuel-efficient car of the future. The role of newer steels, particularly of high-strength low-alloy (HSLA) steels, in automotive uses is examined, and the potential of these steels for solving a part of the automobile weight problem is discussed. The car parts in which iron and steel might be replaced by aluminum or plastics are shown in tabular form.

ID NO.- EI751068656 568656

MECHANISCHE KENNDATEN VON POLYSTYROL-STRUKTURSCHAUMSTOFFEN UND IHRE KONSTRUKTIVE ANWENDUNG. $left bracket$ Mechanical Property Data of PS Structural Foams, and their Uses in Structural Design Applications $right bracket$.

Schleith, O.
Hoechst, Frankfurt AM, Ger

Kunststoffe v 65 n 7 Jul 1975 p 421-427 CODEN: KUNSAV

DESCRIPTORS: (*PLASTICS, FOAMED, *Mechanical Properties), (POLYSTYRENES, Testing), (BUILDING MATERIALS, Plastics),

IDENTIFIERS: STRUCTURAL FOAMS

CARD ALERT: 415, 421, 817

Thermoplastic foams are being increasingly used as materials for load-bearing structural components. One stimulus is the advantage of being able to produce rigid, light-weight components in one operation. To define the limits of application of these materials and to be able to dimension the components an exact knowledge of their behavior under mechanical stress is necessary. Here one must take into account the duration of loading and the ambient temperature. Because of the inhomogeneity of structural foams it is not possible to apply the measured values without some qualification. The measured data vary considerably. Nevertheless, designers should not be kept in ignorance of these results for at least they can serve as a guide for the first design of a given structure. Test data are presented and discussed in terms of their applications in design of structural parts made of structural foam. 1 ref. In German.

ID NO.- EI750957382 557382

DOLLARS AND SENSE OF SELECTING WEAR MATERIALS.

Thomas, Richard A.

Eng Min J v 176 n 7 Jul 1975 p 83-88 CODEN: ENMJAK

DESCRIPTORS: (*BUILDING MATERIALS, *Wear), (MINES AND MINING, Corrosion), (METALS AND ALLOYS, Wear Resisting), (PLASTICS, Chemical Resistance),

CARD ALERT: 415, 421, 502, 531, 815

The author examines the criteria for selecting structural materials in mineral processing with particular attention paid to cost/wear ratios, downtime, material availability, and a host of other factors influencing material usage. The greatest wear logically comes in the comminuting phase of processing, when ores are mechanically reduced in size by primary and secondary crushing and grinding in various types of mills. The material properties of greatest concern are abrasion resistance and toughness. Corrosion $EM DASH$ erosion by chemical rather than mechanical means $EM DASH$ is also discussed as another significant factor in the selection of materials with special emphasis on two widely used categories of nonmetallics: natural and synthetic rubbers, and plastics. 7 refs.

ID NO.- EI750957004 557004

BEHAVIOR OF FATIGUE AND MECHANICAL PROPERTIES OF HYBRID CFRP-Al CONSTRUCTION.

Miyairi, Hiroo; Muramatsu, Atsuyoshi; Nagai, Masahiro
Tokyo Med and Dent Univ, Jpn

J Soc Mater Sci Jpn v 24 n 257 Feb 1975 p 144-149 CODEN: ZARYAQ

DESCRIPTORS: (*ALUMINUM AND ALLOYS, *Fiber Reinforcement), (PLASTICS, REINFORCED, Structural Application), (BUILDING MATERIALS, Testing),

CARD ALERT: 541, 817, 421

Aluminium is, in general, being used as a light structural material, but the demand for light structural materials with better mechanical properties than aluminium is increasing more and more recently. Such a demand may be satisfied with the hybrid CFRP-Al construction. This paper is concerned with the bending strength and the fatigue strength of the hybrid CFRP-Al construction which is made of the combination of aluminium and carbon fiber reinforced plastics (CFRP). The results obtained show that Hybrid-A, bonded with Redux BSL 408, has shown about 2 times the bending strength of aluminium, and hybrid-B, bonded with Redux BSL 308, has shown about 1. 4 times greater strength. 5 refs. In Japanese with English abstract.

ID NO.- EI750854303 554303
FIRE RETARDANT RESIN FOR BUILDING.
Anon
PRT Polym Age v 6 n 5 May 1975 p 128 CODEN: PLYABP
DESCRIPTORS: (*PLASTICS, *Flame Resistance), (BUILDING MATERIALS, Plastics), (POLYESTERS, Processing), (PLASTICS, REINFORCED, Processing),
IDENTIFIERS: FLAME RETARDANT RESINS
CARD ALERT: 415, 816, 817, 914

With the present need to re-examine all fire safety aspects of buildings and building materials, resin manufacturers are developing new polyester systems specifically for this market. Announced by Synthetic Resins Ltd of Liverpool is a new resin known as 'Filabond' 136 1A which achieves a Class 1 rating to BS 476 Part 7, and meets the requirements of the Building Regulations to Class O. This polyester system is used in form of GRP modules which found various applications in the British construction building industry. Applicational details are given.

ID NO.- EI750854300 554300

FILLERS ARE CARRYING A HEAVIER LOAD THESE DAYS.

Wood, A. Stuart

Mod Plast v 52 n 6 Jun 1975 p 42-44 CODEN: MOPLAY

DESCRIPTORS: (*PLASTICS, *Fillers), GLASS, (ALUMINA, Hydrated), SILICATES, ASBESTOS, (BUILDING MATERIALS, Plastics),

CARD ALERT: 413, 415, 812, 817

This paper discusses technological, performance and economic aspects of the use of plastics filled with various materials. It is shown that a mixed-minerals $left double quote$ recipe $right double quote$ toughens extruded HDPE dunnage sheet; calcium silicate fibers increase chemical resistance of PP; hollow silicate spheres improve rigidizing of acrylic thermoforms, also find use in syntactic foams; glass microbubbles make rigid polyurethane foams more impact resistant with no increase in density; treated asbestos, silicas, and clays upgrade performance in many types of resin; mica flake, talc, glass beads, and glass spheres do an upgrading job on dimensional stability; and alumina trihydrate scores as a flame retardant. Loading levels of fillrs is steadily on increase. Alumina trihydrate used at loadings to 60% in tub/shower units performs triple role of flame retardant, smoke suppressant, and filler (extender $EM DASH$ to reduce cost). Trend to treated fillers with coupling agents is indicated.

ID NO.- EI750850338 550338

RESEARCH IN BUILDING MATERIALS.

Mattar, Samir; Manning, Peter
Sir George Williams Univ, Montreal, Que

Archit Sci Rev v 18 n 1 Mar 1975 p 2-9 CODEN: ASRVA4

DESCRIPTORS: (*BUILDING MATERIALS, *Testing), (ALUMINUM AND ALLOYS, Mechanical Properties), WOOD PRODUCTS, PLASTICS, CONCRETE, COMPOSITE MATERIALS,

IDENTIFIERS: TIMBER, COMPOSITE CONSTRUCTION

CARD ALERT: 412, 415, 421, 811, 817

The paper presents a literature review on applied research into the performance-in-use of building materials and the products and components made from them, and constitutes a state-of-the-art of materials research relevant to the task of improving building performance. A way of re-presenting the results of such research, in a manner immediately useful to the building design process, is suggested. 69 refs.

ID NO.- EI750747326 547326

KOMPLEXE DARSTELLUNG DES TOLERIERUNGSPROBLEMS IN DER PLASTVERARBEITUNG UND BEI DER KONSTRUKTIVEN PLASTANWENDUNG. $left bracket$ Complex Representation of the Tolerance Problems in Plastics Processing and Uses of Plastics Parts on Constructional Applications $right bracket$.

von Strauwitz, D.; Schaaf, W.
Tech Univ, Dresden, E Ger

Plaste Kautsch v 22 n 2 Feb 1975 p 117-120 CODEN: PLKAAM

DESCRIPTORS: (*PLASTICS, *Processing), FITS AND TOLERANCES, (BUILDING MATERIALS, Plastics), (MACHINERY, Plastics Parts), STANDARDIZATION, MATHEMATICAL TECHNIQUES,

CARD ALERT: 415, 601, 816, 817, 902, 921

This paper first discusses tolerance problems encountered in plastics plants during manufacture of engineering and construction parts and then suggest a mathematical approach to resolve them. Standardization is shown as one of the most important factors affecting the accuracy and tight tolerances of molded or extruded products. Recommendations for precision molding shops are included. 16 refs. In German.

ID NO.- EI750744849 544849

VORSCHRIFTEN FUER DIE VERWENDUNG BRENNBARER BAUSTOFFE. $left bracket$ Code Regulations of the Use of Flammable Building Materials $right bracket$.

Gruenig, Hansrudolf
Ver Kanton Feuerversicherungsanstalten, Bern, Switz

Kunstst-Plast v 22 n 2 Feb 1975 p 21-24 CODEN: KUPLAK

DESCRIPTORS: (*FLAMMABLE MATERIALS, *Legislation), (BUILDING MATERIALS, Fire Resistance), (PLASTICS, Flammability), MATERIALS TESTING,

IDENTIFIERS: FLAMMABILITY TESTS

CARD ALERT: 415, 423, 817, 902, 914

This is a summary of Swiss Codes regulating conditions under which flammable materials can be used in the construction building industry. Flame resistance requirements are followed by a description of flammability tests which are regarded as legislative standards. In German.

ID NO.- EI750640199 540199

FRP MEANS PERFORMANCE IN CONSTRUCTION.

Trampenau, R. H.; Evans, T. R.

Diamond Shamrock Chem Co, Redwood City, Calif

SPI Reinf Plast/Compos Inst Annu Conf Proc 29th, 1974, for Meet, Washington, DC, Feb 5-8 1974, Sect 7-B, 4 p CODEN: SPCIBY

DESCRIPTORS: (*PLASTICS, REINFORCED, *Flame Resistance), (BUILDING MATERIALS, Plastics), (BUILDINGS, Plastics Applications),

CARD ALERT: 402, 415, 817, 914

The use of fire retardant GFRP in many construction applications is studied. Recent resin developments in the areas of smoke generation are revealed. A series of case histories describing the successful use of fire retardant GFRP in construction applications is presented. In depth examination of the development and testing required to achieve success with a GFRP product, including full scale, end-use testing, is also included.

ID NO.- EI750640162 540162
FRP IN BUILDING CONSTRUCTION $EM DASH$ THE EUROPEAN EXAMPLE UPDATED.
Powell, David
Polyplan Ltd, Leicester, Engl
SPI Reinf Plast/Compos Inst Annu Conf Proc 30th, 1975, for Meet, Washington, DC, Feb 4-7 1975, Sect 3-F, 6 p CODEN: SPCIBY
DESCRIPTORS: *PLASTICS, REINFORCED, (BUILDINGS, Western Europe), (BUILDING MATERIALS, Plastics),
CARD ALERT: 402, 405, 415, 817
The author updates his paper to the 26th conference (1971) by indicating that the European GFRP industry now recognizes that marketing GFRP to the construction industry is a long-term project. He instances how all participants in the building process must be, and in Europe being, included in GFRP marketing programs. The UK is quoted as an example, showing lower building costs ensue. The European Agrement Union has helped GFRP penetration in its ten member countries. The author sees no future for SMC in construction by 1980 and considers GFRP-backed thermoformed acrylic the better candidate for sanitaryware in Europe. House shells offer no prospects on cost grounds. DMC window frames may be a suitable interim measure before injection-molded thermoplastics take over. Cladding is the real growth market. 6 refs.

ID NO.- EI750636107 536107

RP/C STRUCTURES IN BUILDING WALL APPLICATIONS.

Green, Robert H.

Robert H. Green Eng Co, Inc, Atlanta, Ga

SPI Reinf Plast/Compos Inst Annu Conf Proc 29th, 1974, for Meet, Washington, DC, Feb 5-8 1974, Sect 7-D, 8 p CODEN: SPCIBY

DESCRIPTORS: (*BUILDINGS, *Walls), (PLASTICS, REINFORCED, Costs), (BUILDING MATERIALS, Plastics), SANDWICH STRUCTURES,

CARD ALERT: 402, 415, 817, 911

Two unique GFRP wall structures, each of very different types, were designed for commercial building applications. Emphasis was upon the design's special features and economic value. Two different design approaches, those of sandwich construction and thin shell construction, were applied to functionally different types of plants: one a three story office building in Atlanta, Georgia, and the other, a food processing plant in Orlando, Florida. The customer/client requirements and engineering requirements were satisfied in each case. Special considerations had to be given to architectural aesthetics, manufacturing techniques, construction and installation. The ensuing cost savings due to the use of FRP are related to the total building concept.

ID NO.- EI750636102 536102
THIOPLASTE IM HOCHBAU. $left bracket$ Use of Thioplastics in Building Construction $right bracket$.
Enders, Siegfried; Leupold, Guenter
Chemiewerk Greiz-Doelau, E Ger
Bauzeitung (Berl) v 29 n 1 Jan 1975 p 18-21 CODEN: BAZTAP
DESCRIPTORS: (*BUILDINGS, *Plastics Applications), (BUILDING MATERIALS, Plastics),
CARD ALERT: 402, 817
5 refs. In German.

ID NO.- EI750636088 536088

MAJOR BREAKTHROUGH IN LOW COST PLASTIC HOUSING USING JUTE REINFORCED POLYESTERS: THE CARE/WINFIELD/BANGLADESH HOUSE.

Winfield, Armand G.; Winfield, Barbara L.
Armand G. Winfield Inc, West Bablyon, NY

SPI Reinf Plast/Compos Inst Annu Conf Proc 29th, 1974, for Meet, Washington, DC, Feb 5-8 1974, Sect 7-A, 11 p CODEN: SPCIBY

DESCRIPTORS: (*BUILDINGS, *Bangladesh), (BUILDING MATERIALS, Plastics), PLASTICS, REINFORCED, JUTE,

IDENTIFIERS: BUILDING DESIGN

CARD ALERT: 402, 415, 817, 819

This is a report on the execution of a project which was initiated in early 1972, and had as its goal the creation of a rapidly producible structure (at least 100 houses per day) for the Delta area of Bangladesh where cyclones produce winds in excess of 150 MPH and where tidal waves had recently devastated most existing housing. An experimental prototype was produced, constructed primarily of jute reinforced polyester with an . 010 in. exterior layer of glass fiber reinforced polyester. This prototype successfully underwent full scale simulated cyclonic testing. After testing, a second prototype was developed with its design changed to a more conventional panelized system and joined together by simple profiles. The new prototype produced spectacular results in deflection tests. The two prototypes indicate on a practical basis a major breakthrough in the use of plastics materials in association with indigenous raw and waste materials for low cost housing. 4 refs.

ID NO.- EI750636085 536085

PLASTIC SHELTERS FOR SLUM CLEARANCE IN POOR COUNTRIES $EM DASH$ A PROBLEM STATEMENT.

Benjamin, B. S.
Univ of Kans, Lawrence

SPI Reinf Plast/Compos Inst Annu Conf Proc 30th, 1975, for Meet, Washington, DC, Feb 4-7 1975, Sect 3-E, 5 p CODEN: SPCIBY

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (BUILDINGS, India), COST ACCOUNTING,

IDENTIFIERS: PLASTICS SHELTERS

CARD ALERT: 402, 415, 817, 911

The objectives of this paper are to set forth in clear and concise terms, the problems associated with the use of plastics for low cost shelters for the poorest of the poor in the slums in the underdeveloped countries of the world. The paper first sets out to find a meaningful relationship between the cost of the plastic shelter and the income level of the slum dweller. The research is being carried out for India, but is capable of being applied with modifications to other underdeveloped countries in the world. In the context of this cost, the paper then sets down the architectural, structural, materials and manufacturing problems associated with the provision of light weight, easily transportable, packaged kit, plastics shelters for this application. Existing work on the subject carried out all over the world is reviewed and final conclusions are drawn. 15 refs.

ID NO.- EI750636083 536083

BUILDING CODES AND STANDARDS CONTROLLING REINFORCED PLASTICS: SUMMARY AND FORECAST.

McDermott, Joseph S.

RP/C Inst, and Plast in Constr Counc, New York, NY

SPI Reinf Plast/Compos Inst Annu Conf Proc 30th, 1975, for Meet, Washington, DC, Feb 4-7 1975, Sect 3-C, 4 p CODEN: SPCIBY

DESCRIPTORS: (*BUILDING CODES, *United States), (PLASTICS, REINFORCED, Standards), (BUILDING MATERIALS, Testing),

CARD ALERT: 402, 415, 421, 817, 902

It is important to have information on the codes and standards affecting reinforced plastics building products. Not only must they be understood before investing in new product development, but codes must be monitored for the continual changes introduced by others. An understanding of the approval systems for reinforced plastics in construction will smooth the way for individual products and consolidate the industry's position. The current code status of eight GRP building product types is discussed, including reference to test methods which play a crucial role. The sponsoring organizations for various standards are mentioned, as well as the SPI Committees which have liaison responsibility to them. An optimistic general forecast is offered, provided market development is thoroughly researched and objectives are realistic.

ID NO.- EI750532909 532909

EINFLUESSE DER VISKOELASTIZITAET BEI GFK-BAUTEILEN. $left bracket$ Effect of Viscoelasticity in GRP Structural Components $right bracket$

Wiedemann, J.; Griese, H.; Glahn, M.
Tech Univ, Berlin, Ger

Plastverarbeiter v 25 n 9 Sep 1974 p 543-550 CODEN: PLARAN

DESCRIPTORS: (*PLASTICS, REINFORCED, *Viscoelasticity), (PLASTICS, Creep), (BUILDING MATERIALS, Testing), MATHEMATICAL MODELS, (COMPOSITE MATERIALS, Mechanical Properties), GLASS FIBER,

CARD ALERT: 415, 421, 812, 817, 922

To understand creep and relaxation phenomena, the usual model conceptions are explained and compared with experimental test data for GRP. Using as an example the long-term behavior of multilayer composite systems, with respect to their internal stress rearrangement as well as bars under compressive load with respect to the increase in their lateral deflection, calculations have been performed which illustrate the methods' possibilities. The influence and calculation of damping under periodically alternating load is described. The following topics are discussed: requirement of linear viscoelasticity; model conceptions; comparison with experimental creep curves, model adaptation; description of viscoelastic problems by means of integral or sum equations; correspondence between creep and relaxation functions; behavior of a composite system, determinations based on the individual layers, creep curve and stress rearrangement; viscoelastic deflection, periodically alternating load. 10 refs. In German.

ID NO.- EX750532855 532855
NEW FIBRO-PLASTICS MATERIAL FOR FARM BUILDINGS AND EQUIPMENT.
Chilton, C. R.
Rabor Ltd, Harlow, Engl
Plast in Agric and Hortic Conf, Proc, Wye Coll, Kent, Engl, Mar 25-27 1974 3 p. Publ by Plast Inst, London, Engl, 1974
DESCRIPTORS: (*PLASTICS, *Waste Utilization), (BUILDING MATERIALS, Plastics), (PLASTICS, Agriculture Applications), (PAPERBOARDS, Physical Properties),
CARD ALERT: 415, 811, 817, 821, 913, 931
This paper describes properties and performance of a new developed building board, tradenamed $left double quote$ K Board $right double quote$, which has found its place in the agricultural industry. This board is made from packaging wastes consisting of paper coated with plastics. Results of materials testing are presented and application field in the agriculture is outlined.

ID NO.- EI750529079 529079

LOW COST INDUSTRIALISED BUILDING.

Pickett, Alan

PRT Polym Age v 6 n 1-2 Jan-Feb 1975 p 11-13 CODEN: PLYABP

DESCRIPTORS: (*BUILDINGS, *Prefabrication), (BUILDING MATERIALS, Plastics),

CARD ALERT: 402, 415, 817

This article analyzes means of overcoming the housing crisis, and puts forward practical suggestions for pre-fabricated structures that may be dismantled by the private owner or local authority for moving to another site. Ideally, such homes should be of conventional appearance in order to blend in with the surroundings. The discussion is presented under the following headings $EM DASH$ system building; immediate requirements; recent system; design and service properties.

ID NO.- EI750529078 529078

RACIONALNI VYUZITI PLASTICKYCH HMOT PRO STAVEBNI KONSTRUKCE. $left bracket$ Rational Use of Plastics for Building Structures $right bracket$.

Skupin, Lumir; Weiss, Vladimir
CVUT, Prague, Czech

Stavebnicky Cas v 22 n 8 1974 p 427-439 CODEN: STVCA2

DESCRIPTORS: (*BUILDINGS, *Plastics Applications), (BUILDING MATERIALS, Plastics), (MATERIALS, Creep), ELASTICITY,

CARD ALERT: 402, 415, 817, 931

This paper presents a classification of plastics and materials manufactured on their basis for structural purposes as well as a number of rules to be observed by the designers of load-bearing structures consisting of these materials. It is recommended particularly to take into consideration the low ratios of moduli of elasticity to the strength as well as the considerable creep values of plastics requiring a limitation of deformation of structural elements by increasing their stiffness, especially of flexural elements, and avoidance of slender bars subjected to compression. 15 refs. In Slovak with English abstract.

ID NO.- EI750529062 529062
TEER-EPOXIDE IM WASSERBAU. $left bracket$ Use of Tar-Epoxides in Construction of Hydraulic Structures $right bracket$.
Depke, F. M.
Tiefbau v 17 n 1 Jan 1975 p 32-36 CODEN: TFBABE
DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), EPOXY RESINS, HYDRAULIC STRUCTURES,
IDENTIFIERS: TAR-EPOXIDES
CARD ALERT: 632, 817
In German.

ID NO.- EI7504025804 525804

WYNIKI BADAN ODPORNOSCI MATERIALOW Z TWORZYW SZTUCZNYCH NA DZIALANIE CZYNNIKOW ATMOSFERYCZNYCH. $left bracket$ Resistance of Plastics Building Materials to Weathering $right bracket$.

Aleksandrowicz, Sabina

Inst Tech Budow, Warsaw, Pol

Polimery v 19 n 9 Sep 1974 p 436-441 CODEN: POLIA4

DESCRIPTORS: (*PLASTICS, *Weathering), (BUILDING MATERIALS, Plastics), (PLASTICS, REINFORCED, Weathering), GLASS FIBERS, POLYVINYL CHLORIDE, POLYOLEFINS,

CARD ALERT: 415, 421, 423, 812, 817

The paper deals with the estimation of changes of the physical and mechanical properties of plastics such as rigid PVC, PP, PE, and polyester or melamine-phenol-formaldehyde GFRP exposed to natural weathering. An approximate correlation between the results of natural weathering and those obtained in strictly defined laboratory accelerated weathering tests has been established for PVC and GRP. 15 refs. In Polish.

ID NO.- EI750421909 521909

ZUR ANWENDUNG STATISTISCHER METHODEN IN DER BAUSTOFFPRUEFUNG. $left bracket$ Application of Statistical Methods in the Testing of Building Materials $right bracket$.

Englert, Gerhard
Tech Univ, Munich, Ger

Materialpruefung v 17 n 1 Jan 1975 p 14-16 CODEN: MTPRAJ

DESCRIPTORS: (*BUILDING MATERIALS, *Testing), STATISTICAL METHODS, PLASTICS FILMS,

CARD ALERT: 421, 423, 817, 922

Testing methods, the planning of testing programs, and methods of evaluating the results are reviewed. Testing of plastics foils is used as an example of applications. In German.

ID NO.- EI750521170 521170

THERMOFORMING ABS FOR LARGE STRUCTURAL APPLICATIONS.

Gembinski, John

Centaur Eng, Borg-Warner Corp, Mount Clemens, Mich

Basic Princ of Thermoform, Proc of Semin, Polytech Inst of Brooklyn, NY, Jun 18-19 1970 p 183-210. Publ by Gordon and Breach Sci Publ, Inc, New York, NY, 1973

DESCRIPTORS: (*ABS RESINS, *Thermoforming), (BUILDING MATERIALS, Plastics), (PLASTICS SHEETS, Processing),

IDENTIFIERS: LARGE PLASTICS PARTS

CARD ALERT: 402, 415, 816, 817

A brief history of the development of thermoforming structural parts at Centaur Engineering is followed by a review of their structural applications. They include $EM DASH$ thermoformed in reinforcements (ribs, V-channels, etc); foam sandwich construction, inner and outer panels; attached reinforcements. The following applications are detailed along with relevant illustrations $EM DASH$ load-bearing structural part in buildings; automotive, recreational vehicles, marine; campers; and housing. It is concluded that large structural thermoformed parts are a reality giving the designer the ability to produce large molded shape, the manufacturer, an economic manufacturing process for the 1000 to 100,000 part range, and the consumer, the advantage of improved products at lower costs.

ID NO.- EI750318923 518923

EXPERIMENTAL BRIDGE GIRDER OF REINFORCED PLASTIC

McCormick, Fred C.
Univ of Va, Charlottesville

ASCE Transp Eng J v 101 n 1 Feb 1975 p 47-63 CODEN: TPEJAN

DESCRIPTORS: *PLASTICS, REINFORCED, BRIDGES, HIGHWAY, BEAMS AND GIRDERS, GLASS FIBER, BUILDING MATERIALS,

IDENTIFIERS: BRIDGE GIRDERS

CARD ALERT: 401, 406, 408, 413, 817, 931

A girder composed entirely of glass-reinforced polyester resin was designed, fabricated, and tested to failure under short-term static loads. The girder was designed with a solid flange and open web by classical procedures based on a pinned-end truss configuration. Resonably close agreement was achieved between theoretical and experimental measurements. Test specimens had open triangular shaped cross sections. The web and lower chord elements were fabricated by $left double quote$ winding $right double quote$ continuous glass roving impregnated with polyester around preformed web stiffeners. Measured strains and deflections varied linearly with load. Structural failures usually occured in joints formed with adhesives. An ultimate live load of 93 times the dead weight of the member was achieved for one of the specimens. 11 refs.

ID NO.- EI750318914 518914

STRUCTURAL PLASTIC FOAMS: CURRENT STATUS.

Archer, E. W.; Bergstrom, D. H.

Ford Mot Co, Detroit, Mich

Mech Eng v 96 n 11 Nov 1974 p 23-28 CODEN: MEENAH

DESCRIPTORS: (*PLASTICS, FOAMED, *Structural Application), (AUTOMOBILE MATERIALS, Plastics), (BUILDING MATERIALS, Plastics),

CARD ALERT: 817, 415, 662

Favorable flexural stiffness to weight ratios are not as important in recommending structural foams as is the possibility of molding large, stress-free parts without sink marks. The stress-free feature of foamed parts can make them stronger than equivalent plastic parts. The stress-free property also makes for excellent dimensional stability in foamed parts. Good design practice in the use of foamed parts calls for placing fastening loads on the skin rather than the foam.

ID NO.- EI750316450 516450
EPOXY FLOOR SURFACES.
Gosselin, Chris
Civ Eng (Lond) n 821 Jan 1975 p 30-31 CODEN: CVEGA5
DESCRIPTORS: (*FLOORS, *Composite Materials), EPOXY RESINS, COMPOSITE MATERIALS, (BUILDING MATERIALS, Plastics),
CARD ALERT: 402, 817
The author explores the basic requirements and properties of the hard-wearing composites of plastic materials.

ID NO.- EX750316331 516331

EFFECTS OF TIME, TEMPERATURE AND CURING ON THE STIFFNESS OF EPOXY LAMINATING SYSTEMS.

Waidmann, G. W.; Ogorkiewicz, R. M.
Imp Coll of Sci and Technol, London, Engl

J Mater Sci v 9 n 10 Oct 1974 p 1670-1680 CODEN: JMTSAS

DESCRIPTORS: (*EPOXY RESINS, *Structural Application), (BUILDING MATERIALS, Plastics), PLASTICS LAMINATES,

CARD ALERT: 815, 817, 415

Relative creep moduli of a series of epoxy laminating resins were found to be the same in uniaxial tension and in torsion when measured under loads of short duration. However, their tensile creep moduli decreased with time and temperature at different rates, changing their relative stiffness. For one typical resin the short-term tensile and shear moduli decreased with cure temperature reaching minima and then increased slightly. Deflection temperature under load determined by standard tests correlated inversely with the short-term tensile modulus for the typical resin considered and failed to provide a basis for determining the relative stiffness of the different resin systems. 8 refs.

ID NO.- EI750211860 511860

EXTRUDED CELLULAR PLASTICS IN THE BUILDING INDUSTRY.

Yates, G.
Foster Plast (Rainford) Ltd

Eur Plast News v 1 n 7 Nov 1974 p 39-42 CODEN: EUPNBT

DESCRIPTORS: (*PLASTICS, FOAMED, *Extrusion), (BUILDING MATERIALS, Plastics),

IDENTIFIERS: PLASTIC FOAM PROFILES

CARD ALERT: 415, 816, 817

This paper is concerned with technological, property, performance and economic aspects of cellular rigid plastics profiles which represent an increasingly important addition to the building materials market. Easy to handle and install, they can have superior properties over their timber equivalents. Applications include skirting, architraves, cladding, window frames, doors and door-frames. This article outlines types and systems and progress in the development of the market in Great Britain. Several processing systems are briefly described.

ID NO. - EI750104950 504950

PROFILER AV STYV VINYLKLORIDCELLPLAST. $left bracket$ Profiles from Rigid PVC Foam $right bracket$.

Barth, H.
Wacker-Chem, Munich, Ger

Plastvarlden n 9 Sep 1974 p 45 CODEN: PLTVAS

DESCRIPTORS: (*POLYVINYL CHLORIDE, *Processing), (PLASTICS, FOAMED, Extrusion), (BUILDING MATERIALS, Plastics),

IDENTIFIERS: PVC PROFILES

CARD ALERT: 415, 816, 817

The extrusion of rigid foamed PVC-profiles represents a rapidly increasing market, dominated by the demands of the construction industry. The article gives a brief introduction to the technical aspects of the manufacturing methods. In Swedish with English abstract.

ID NO.- EI750104658 504658

VLASTNOSTI PLASTU Z HLEDISKA APLIKACI. $left bracket$ Plastics Properties from the Point of View of Their Applications.

Vesely, Karel; Foral, Jiri

Vyz Ustav Makromol Chem, Brno, Czech

Plast Kauc v 11 n 1 1974 p 2-5 CODEN: PLKCAS

DESCRIPTORS: (*PLASTICS, *Physical Properties), (BUILDING MATERIALS, Plastics),

CARD ALERT: 415, 817, 931

The position of plastics among other construction materials is evaluated and their fundamental characteristics (mechanical properties, workability, aging resistance, incombustibility and price), as well as their service life in basic applications are dealt with in the paper. 6 refs. In Czech with English abstract.

ID NO.- EI750100612 500612

PLASTE UND ELASTE $EN DASH$ BEDEUTSAME HELFER BEI DER VERWIRKLICHUNG DES WOHNUNGSBAUPROGRAMMS. $left bracket$ Plastics and Elastomers as Significant Aids in Realization of Housing Programs $right bracket$.

Bachmann, A.; Siegfried, S.
Chem Werke Buna, Schkopau, E Ger

Plaste Kautsch v 21 n 8 Aug 1974 p 618-620 CODEN: PLKAAM

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (PLASTICS INDUSTRY, East Germany), RUBBER, SYNTHETIC, (SEALS, Rubber),

CARD ALERT: 415, 619, 817, 818

This is a review of plastics uses in building applications in East Germany and Abroad. Statistical data are given in relation to types of applications (pipe, roofing, floor, constructional members, etc) and plastics used (PVC, polyolefins, polyesters, PS foam, GRP, etc). Applications of thiopolymers in sealants are indicated, along with the use of synthetic rubber in roofing. 9 refs. In German.

ID NO.- EI750100611 500611

VORGABE UND NACHKONTROLLE KRITISCHER DEHNUNGEN IN DER ANWENDUNG AUF THERMOPLASTISCHE BAUTEILE $EM DASH$ 6. ERLAEUTERUNGEN ZU DIN 53449. $left bracket$ Specifications and Control of Critical Strain of Thermoplastics Parts in Building Applications $EM DASH$ 6. Explanation of DIN 53449 $right bracket$.

Pohrt, J.
BASF, Ludwigshafen AR, Ger

Gummi, Asbest, Kunstst v 27 n 10 Oct 1974 p 842-847 CODEN: GAKSA2

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (PLASTICS, Mechanical Properties), CONTROL, MECHANICAL VARIABLES, (MATERIALS TESTING, Standards),

CARD ALERT: 415, 421, 731, 817, 902

A brief summary of contents of previous 5 parts of an article series is followed by a critical assessment of the West German Standard DIN53449, which describes the test procedure for the determination of critical strains of structural members made of plastics materials. A detailed description of the test method is accompanied by a presentation of measuring data and their evaluation for practical purposes. Equipment as well as auxiliary materials used are also briefly dealt with. In German.

ID NO.- EI750100610 500610

IDENTIFICATION OF THE COLOR AND APPEARANCE OF PLASTICS USED IN THE BUILDING INDUSTRY.

Hunter, R. S.
Hunter Assoc Lab, Inc, Fairfax, Va

SPE, Cleveland Sect, Reg Tech Conf, Tech Pap, Ohio, Oct 7-8 1974 p 55-75. Available from SPE, Greenwich, Conn, 1974

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (PLASTICS, Coloring), (CHEMICAL ANALYSIS, Color Determination),

IDENTIFIERS: COLOR IDENTIFICATION

CARD CLERT: 415, 801, 816, 817

Appearance attributes of plastics can be divided into color attributes such as hue, saturation and lightness, and geometric attributes such as gloss, texture, haze, opacity and directionality. Color is due primarily to the spectrally selective absorption of light. Gloss, texture, haze and other geometric characteristics of appearance are associated with surface smoothness, contour and structure beneath the surface. It can be shown that complete analyses of product appearance is impossibly complex. In practice, measurements are made only of critically important appearance indicators. Thus, color is normally measured only for standardized conditions under which it is normally observed. Similarly, gloss and the other geometric attributes are described only for the one or two most revealing conditions of evaluation. Recommendations for practical uses are enclosed in terms of tables. 7 refs.

ID NO.- EI750100609 500609
QUALITY CONTROL IN BUILDING.
Lant, T. P. R.; May, J. O.
Agrement Board, Hemel Hempstead, Engl
Plastica v 27 n 9 Sep 1974 p 402-407 CODEN: PLASAQ
DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), QUALITY CONTROL,
CARD ALERT: 415, 817, 913

This paper is concerned with quality control in the sense of achieving an end product that is satisfactory. Particular attention being paid to building components made of/with plastics. Plastics parts tested are broken down under three main headings $EM DASH$ services, surface and thermal insulants. Quality control procedure employed in the United Kingdom is detailed in appendices.

ID NO.- EI750100608 500608

KUNSTSTOFFEN BIJ RESTAURATIE VAN HISTORISCHE MONUMENTEN. $Soft bracket$ Use of Plastics in the Restoration of Historical Monuments $Right bracket$.

Janse, H.
Rijksdienst voor de Monumentenzorg, Zeist, Neth

Plastica v 27 n 9 Sep 1974 p 381-391 CODEN: PLASAQ

DESCRIPTORS: (*BUILDING MATERIALS, *Plastics), (BUILDINGS, Restoration), ACRYLICS, EPOXY RESINS, POLYESTERS, (PLASTICS INDUSTRY, Netherlands),

CARD ALERT: 402, 415, 817

In the restoration of buildings of historic interest plastics are used as result of the present-day approach to restoration. The first aim is to preserve an original situation without exchanging deteriorated parts. The maintenance of the old Dutch pan-tile is possible using ventilating plastic sheets. Exterior surfaces are coated with silicones or hydrofilic acrylates to prevent water and aggressive components from penetrating. Hydrofilic acrylates are used as salt barrier between plaster and wall to prevent plaster from being attacked by salts. Low viscosity polymers are in use for impregnantion of decayed stone and wood. Decayed wood of beam and roofs can be replaced by epoxy compounds reinforced by polyester rods. 3 refs. In Dutch with English abstract.