minutes

SPI

PIPE RESOURCE ORGANIZATION

Hyatt Regency
Dallas/Fort Worth Airport
Dallas, Texas
East Tower

Thursday
August 29, 1991
8:00 a.m.

Attendees:

Michael Barish, Borden Chemicals and Plastics
Ron Bishop, Carlon (Guest)
Roy Gottesman, Vinyl Institute
Peter Lloyd, BFGoodrich Company
Bob Novick, CertainTeed Corporation
Cal Rehfuss, Georgia Gulf Corporation
Dan Stanowick, Edward Howard and Company
Greg Torchiana, Rohm and Haas Company
Bob Walker, Uni-Bell PVC Pipe Association
Martin G. White, Occidental Chemical Corporation

I. SELF-INTRODUCTIONS/APPROVAL OF MINUTES OF PREVIOUS MEETING

Chairman Michael Barish opened the meeting at 8:07 a.m. and a round of self-introductions followed. On motion of Greg Torchiana, seconded by Peter Lloyd, the minutes of the May 30, 1991 meeting were approved as received.

II. OBJECTIVES OF MEETING

Chairman Michael Barish indicated that the agenda was a full one and was aimed at determining how well we were on target in our plans for carrying out a pro-active program to promote PVC pipe. He further noted that later in the program, Ron Bishop of Carlon would be in attendance to provide a presentation on opportunities in the very large diameter pipe market.

Peter Lloyd advised the group that, at the request of a Canadian customer, Scepter, who had sought help and representation on the Canadian Standards Association (CSA), he has now been accepted as a member of the CSA committee that will be developing a standard for large diameter PVC pipe of 16 inches and up in size. This, in part, has been prompted by a move by the polyethylene pipe producers to have a standard written that would solely cover their product.

The Vinyl Institute, A Division of The Society of the Plastics Industry, Inc.
Wayne Interchange Plaza II 155 Route 46 West Wayne New Jersey 07470 201 [illegible]

III. AGENCY REPORT ON MARKETING/COMMUNICATIONS CAMPAIGN

A. Advertising

Dan Stanowick reported that the second series of 3 testimonial ads is up and running every other month in the AWWA Journal. The first of these appeared in July and these will continue through May. The ads cover the following in sequence:

Total Performance
Reliability
Versatility

Further, he indicated that he will watch for plans by AWWA to highlight a specific topic and could utilize any of our series of 6 available ads if they fit more properly with the subject of a given special issue. In response to Mike Barish's question as to the cost for the ad series, Dan Stanowick indicated a cost of approximately $2,500 for each ad on a 6-insertion schedule.

Dan Stanowick indicated that ads had been inserted in the Municipal Index and the Public Works Manual annual editions and these have had an unexpectedly high rate of response. Over 500 inquiries resulted from the insertion in Public Works Manual and several hundred from the ad in Municipal Index.

In view of the apparent high response to these ads in special issues, and since there are no funds available for continuing these ads in the current fiscal year, Mike Barish asked Bob Walker to consider whether Uni-Bell would be willing to fund these ads in view of funds that would be available from the Vinyl Institute contribution to Uni-Bell that would be unexpended because of the resignation of Dennis Bauer, the staff engineer at Uni-Bell, who has not yet been replaced.

Assignment:

1. Dan Stanowick will determine whether there is still time to place ads in these annual editions or whether their advertising deadlines have been passed.

2. Bob Walker will check with the Uni-Bell Market Development Committee at its meeting on September 17th to determine whether Uni-Bell would be able to fund these ads estimated at a cost of $4,000-$5,000 per placement, assuming that the deadlines have not been passed.

Dan Stanowick also reported that since the 6 ads in the series were compatible in look, they were recently mounted in a collage and used at the Uni-Bell booth at the AWWA show in Philadelphia.

Roy Gottesman reminded the group that, at the end of the current fiscal year, it should plan to carry out a second survey to determine the effectiveness of this program. In this connection, Bob Walker reported that Uni-Bell is considering a survey of water utilities to determine how bad are the problems relating to leaks in that industry, their frequency, costs and types of pipe involved.

He suggested the possibility that both surveys might be combined. However, Roy Gottesman pointed out that the audience of the proposed survey by Uni-Bell would only be a portion of the group that were originally surveyed in the Sommers market research.

Assignment:

Dan Stanowick has the assignment to make a recommendation to PRO with regard to a follow-up market research survey regarding the perceptions of PVC large diameter pipe to determine the effectiveness of the current advertising program.

B. Information Kits/Literature Fulfillment

Dan Stanowick reported that the 3 new ads as well as an update on PVC and drinking water safety are being added to the literature fulfillment kit. He noted that a re-vion of the technical bibliography is in progress and there are some 15-20 changes. Several changes were verbally given to Dan Stanowick at the meeting including a suggestion that the McGraw-Hill book by Professor Moser on "Buried Pipe Design" be given a separate listing.

Assignment:

1. All PRO members are to review this updated technical bibliography and provide Dan Stanowick with changes, if any, no later than October 1.

2. Bob Walker is to advise Dan Stanowick when the AWWA standard on C907 pipe is formally approved, which is expected in 30 days.

3. Dan Stanowick will complete the revisions on this technical bibliography sometime after October 1 and send same to Al Reventas for final review before it is printed.

Dan Stanowick reported that he had a press release on the results of the updating of the cost/benefit study by IFT. He noted that revising and printing the summary of each of these studies would cost about $4,000 and recommended against it because the results are virtually identical with those of the 1988 survey. He recommended, instead, sending out a press release.

Roy Gottesman suggested that a synopsis of the differences between the 1988 and 1991 studies prepared and issued as a one-page cover when the four-page summary of the older study is sent out in response to the press release. The group agreed with this approach.

Assignment:

1. PRO members on the Communications Subcommittee are to review the draft press release and provide comments to Dan Stanowick.

2. Dan Stanowick is to prepare a one-page synopsis to cover the summary of the IFT 1988 study.

As regard to the effectiveness of the ads and press release campaign, Dan Stanowick reported that over 1,000 inquiries had been received thus far in 1991 and the split is roughly equal between ads and publicity. He noted the rate of inquiries is higher than in 1990 when over 1,300 inquiries were received for the entire year.

C. Other Publicity

Dan Stanowick indicated that a press release had been issued on the new technical bulletin on drinking water safety. One will also be issued when the updated technical bibliography is completed, and as noted above, 3 press releases on the cost/benefit study by IFT are to be reviewed.

D. **Case Histories**

Dan Stanowick reported that a new case history has been completed featuring Robert Welton in Fargo, North Dakota and has been offered to approximately 6 non-competing trade media.

Another case history is under development involving Southern State Utilities in Apopka, Florida. A case history on a rural water system in Lorraine County, Ohio is being finalized.

A west coast case history article taken from the recent Uni-Bell news on an installation in Dos Pollos, California will be offered to 4 or 5 non-competing trade magazines and this will also be converted into a Pipe Resource Report for use in the fact kit.

Dan Stanowick also reported on a number of case history placements that are pending including an insertion in Water World News in September relating to Cape Coral, Florida, articles in Civil Engineering in their November 1991 pipelines issue and one in Engineering News Records special issue of October, both of which will feature Paul Werner and the Corpus Christi system and an article in Water Engineering and Management in September 1991, which will be based on the Briley Wild (Jack Dillard) case history.

Dan Stanowick also indicated that the Florida Specifier is planning to do an article on the Jack Dillard/Briley Wild development and Constructioneer magazine will feature the Corpus Christi pipeline in a January 1992 article.

Dan Stanowick reported on a potential opportunity in Pipe lines and Utilities magazine for a primer article on PVC water and sewer pipe of approximately 1,500 words. As this magazine was not really known to the participants in the meeting, further information is needed before a decision can be made.

Assignments:

1. Dan Stanowick will provide Bob Walker with information on the magazine and the article that they have indicated an interest in.

2. Bob Walker will review all of this and if it appears that this would be a useful placement, Bob agreed to write-up such an article which could be offered to the magazine.

E. **Other**

Dan Stanowick reported that arrangements have been completed for speakers representing the Vinyl Institute to give a seminar presentation at the Southern Building Construction Congress International (SBCCI) in Tampa, Florida in late October. He noted that the entire presentation will be videotaped for possible later use.

Roy Gottesman indicated that part of his presentation will involve "recycling" a survey carried out some 5

years ago amongst builders, architects and code officials regarding their perceptions of PVC in the building and construction area.

Assignment:

Roy Gottesman accepted the assignment to give this slide presentation at the next PRO meeting.

IV. INFLUENTIALS LIST UPDATING

Roy Gottesman reported that, as agreed at the prior meetings, an expanded influentials list has been compiled and now comprises 104 names. He noted however that this list is already out-of-date, pointing out several names of individuals who are no longer in their "influential" position.

It was agreed that sometime after November 1, a letter will be sent to the influentials list, providing them with computer print-outs of new potential leads, as well as inquiring whether others in their organization should be on the PRO mailing list and whether they are the current person to be receiving these periodic mailings. Included in the package will be updated literature, including the Drinking Water Safety technical paper and the updated bibliography.

Assignments:

1. Martin White was provided with the updated list and he is to review same and return it to Roy Gottesman by October 1 with any changes/additions/revisions.

2. Roy Gottesman and Dan Stanowick will prepare an appropriate letter to go out to the influentials some time in November with the prospects lists and new literature.

Peter Lloyd noted that Plastics Pipes VIII is to be held in The Netherlands in September 1992 and the first announcement and call for papers has been received. In review of the agenda, it appeared desirable to have a paper relating to environmental issues proposed.

Assignment:

Roy Gottesman will talk with John York of EVC to see whether EVC is planning to present a paper at this conference and will advise PRO.

Dependent on EVC's decision, the desirability of the Vinyl Institute sponsoring a paper can be decided.

V. UNI-BELL COOPERATIVE PROGRAM

A. Pivotal Cities

Bob Walker reported on the program which includes both regional areas and specific member company designated prospects. He noted that since the last meeting, Iowa City, Iowa has approved C900 PVC pipe for watermains and Portland, Oregon is the second west coast city of a major size going in this direction. This offers hope that other major cities such as Seattle, San Francisco and Los Angeles may be future prospects.

In Cleveland, he noted that a committee is being formed to evaluate water pipe specifications and that permeation seems to be the lingering issue there. He noted that he had provided a seminar to the Lansing, Michigan water department which is run by a private utility. This was well-received and will be followed up.

With regard to the Vinyl Institute-sponsored pivotal cities, he indicated that a seminar was given in Cobb County, Georgia on sewer pipe applications and was well-received.

He plans to follow-up at the Distribution System Symposium (DSS) trade show which will be held in Atlanta in September. He has tried to follow-up to provide a seminar in water distribution, but is running into resistance because the maintenance department is not very receptive to this. He has been asked to provide a letter and [illegible] th lead time for their consideration.

With regard to the Washington suburban area, they continue to be interested, but he is not certain about a seminar there. Information has been sent regarding ultra-violet degradation. Both the suburban Atlanta and Washington areas continue to be of interest to the Vinyl Institute and will be pursued dependent upon manpower and time availabilities by Uni-Bell.

B. Uni-Bell Handbook

Bob Walker reported that the work on the handbook is done. The first half is being typeset and the publisher still indicates a publication date as the end of September. 5,000 copies are to be printed.

C. AWWA Research Foundation RFP 708

Bob Walker reported on this project, which has been awarded to Dr. Al Moser at Utah State. The total cost of

the project is $163,000. As it first phase, the project contemplates a survey of utilities in terms of actual performance areas. The second phase will involve focusing in on those areas that are considered performance problems. As the initial survey wording could be critical, Uni-Bell received the questionnaire from Dr. Moser and has sent him a revision of same.

Bob Walker provided a copy of the revised questionnaire to the PRO members.

Assignment:

All PRO members are to provide Bob Walker with any suggested changes or revisions on the questionnaire no later than August 30.

As regards to the timing of this project, Bob Walker indicated that the AWWA Research Foundation aims to have the survey in the mail by October, so that the compilation of results could be completed by year-end. They would expect to start phase two of the project in January of next year aiming for completion before the end of the year.

The final work product will be reviewed by a 5-man advisory committee, including members of academia and the consulting profession.

D. **AWWA Conference/Trade Show Booth**

The booth was exhibited at the AWWA Conference in Philadelphia in June and the Vinyl Institute ad collage was displayed. This was considered successful. This same booth will be displayed at the Distribution Systems Symposium (DSS) in Atlanta starting the week of September 9.

E. **PRO Mailing List**

Bob Walker did not recall receiving this mailing list from the Vinyl Institute.

Assignment:

Bob Walker will check to see whether this list has been received and if not, will request Roy Gottesman to provide a second copy.

F. **Staff Engineer Replacement**

With the resignation of Dennis Bauer to join ETI, Bob Walker indicated that they have advertised for a replacement and have interviewed some 8 candidates. They expect to make a decision within the next two weeks, but only if they get the right person.

Bob Walker advised the group that in recognition of Dave Eckstein's broader responsibilities and years of experience with Uni-Bell, his title has been elevated from Technical Director to Deputy Executive Director.

VI. PRESENTATION ON LARGE DIAMETER PVC PIPE

Ron Bishop, Director of Technical Services at Carlon introduced this subject by indicating that the presentation, which would also include Bob Walker, would discuss the large diameter non-pressure PVC pipe opportunities, including applications in sanitary and storm sewers as well as highway under-drain culverts and cross-drains.

He indicated that the purpose and the mission of the Vinyl Institute Pipe Resource Organization and Uni-Bell are the same, that being to grow and prosper in the large-diameter pipe industry.

Bob Walker presented a discussion on the market opportunities and the size of this market. Largely, the information that he presented can be found in Appendix A of these minutes. Working with data from the 1988 Leading Edge report, which was based on 1987 information, Bob suggested that the report on the use of plastic pipe in these industries could be off by a factor of 5-10.

Bob noted that the storm sewer, highway and culvert drainpipe markets are approximately 75-80% in concrete. He indicated that the numbers in these reports are meaningful, but the amounts of concrete, steel, clay and plastics were all probably understated. He described the products in this market, including Ultra-Rib produced by Extrusion Technologies Inc., Perma-Lock manufactured by JM Manufacturing Company and the Carlon product which is named Vylon.

On the basis of the projections made, assuming the total replacement of other materials by PVC pipe, Bob Walker offered a projection of the total large diameter PVC pipe market potential was 1.8 billion pounds. On the basis of an estimate that 60% of the sanitary sewer market, 30% of the storm, highway and culvert pipes and 40% of water supply pipes could be replaced by PVC, this would indicate a potential market of some 680 million pounds.

On the basis of the prices of concrete at $0.05 per pound, ductile iron at $0.23 per pound and PVC at $0.42 per pound, the price ratios would be:

PVC: Concrete = 8.4/1.0
PVC: Ductile Iron = 1.8/1.0

for price equivalency.

Ron Bishop next discussed the opportunities. In his view, the opportunity exists in water applications where PVC is competitive with ductile iron, if one takes into account the cost differential which would be necessary for price equivalency.

He stated that technically the application is similar to that of C900 and the questions received in the field are similar to those received day-to-day in smaller large diameter products.

Ron Bishop briefing discussed polyethylene materials and showed samples of Spiralite and Driscopipe. He noted that these products, which are being used in the sanitary sewer area, is one where the properties of PVC can be exploited. He noted that at the same stiffness, PVC products can beat polyethylene products at any time. Further information presented by Ron Bishop can be found in Appendix B to these minutes.

In further discussion, the obstacles existing the the opportunities presented largely relate to the need for improving the technical sales area where there is considerable weakness. Further, it was noted that the "bashing" of one plastic by another was counter-productive. It was suggested that a joint meeting with the polyethylene pipe producers that are largely represented by the Plastics Pipe Institute could be useful.

Assignment:

Ron Bishop and Bob Walker will discuss with the Uni-Bell Market Development Committee the desirability of a joint meeting with polyethylene pipe producers. If they feel that this is desirable, they will so advise Roy Gottesman, who agreed to talk with Stan Mruk about such a meeting.

Ron Bishop also discussed how the Vinyl Institute and Uni-Bell could cooperate and cited the following areas:

1. Education
2. Unifying the industry
3. Responding to the negative campaign by concrete producers. This is a highly politically sensitive area.
4. Promotion of the advantages of vinyl pipe.
5. Working with city and county engineers in pivotal areas.

6. Promoting the success via case histories.
7. Translating the successful use of PVC from small diameter (up to 14" pipe) to larger diameters.
8. Utilizing the political process where this could advance PVC pipe's acceptance.

VII. DISCUSSION ON POTENTIAL VINYL INSTITUTE/UNI-BELL ACTIVITY

This discussion was held at the completion of the remainder of the agenda items, but in the interest of keeping all information on this subject together, that discussion is summarized here.

In the area of education, Ron Bishop noted that the Piping Systems Institute held at Utah State has been successful, noting that in the past a major job in Arkansas as well as 6 other large projects were sold. It is recognized that the timing of the last planned session was unfortunate due to the poor economy. Uni-Bell plans to carry out a series of regional seminar programs, largely using the type of information presented at the Piping Systems Institute.

Case histories are useful, but Ron Bishop probably does not have all of the case histories that have been developed by PRO.

Assignment:

Dan Stanowick has the assignment to send Ron Bishop copies of all case histories used in the PRO promotional campaign. A video that could stimulate interest in large diameter PVC pipe is planned by Uni-Bell.

The necessity to prevent inter-plastics warfare is recognized and is an attempt to unify the industry and a strategy to respond to the negative campaigns of concrete pipe producers is also needed.

Since the presentation has not been given to the Uni-Bell Market Development Group, nor have they reviewed this, it was agreed that it would be desirable to have such a review take place with the objective of receiving from Uni-Bell their view on what is necessary to develop a useful program, assuming that they had the sole responsibility for same.

Assignment:

Ron Bishop and Bob Walker have the assignment to review this planned program with the Uni-Bell Market Development Committee on September 17 and then to advise Vinyl Institute PRO how it can be of help to them in promoting PVC pipe for these expanded uses.

VII. CALIFORNIA ENVIRONMENTAL IMPACT REPORT

Roy Gottesman reported that based on a review by the California attorney general's office, it appears that the Environmental Impact Report prepared by SRI is legally inadequate, as it apparently does not meet the requirements of the California Environmental Quality Act. He noted that the Housing and Community Development Department and their new Director, Tim Coyle appear to have reservations that a suitable report can be produced by SRI and appear to be leaning towards obtaining a new contractor.

However, a meeting is planned by Lew Freeman of SPI and SPI attorneys with the Housing and Community Development Department indicating that the original contract has not been adhered to and trying to resolve who will be financially responsible for any revisions needed on the SRI report. This meeting is scheduled to be held during the week of September 9.

VIII. UPDATE ON PIPE INDUSTRY TRADE ASSOCIATION CONSOLIDATION

Mike Barish reported that nothing has happened since the last PRO meeting in May. He reported that USPPA members have joined PPFA and planned to hold separate meetings in conjunction with PPFA meetings. Any joint meetings involving Uni-Bell and PPFA are considered to be at least 2 years away because of prior meeting commitments by these respective organizations.

IX. SOLVENT CEMENT ISSUES/SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Roy Gottesman reported on an update that he had received from Don Goodman. The group that has been set-up as a result of discussions at the March PPFA meeting has raised approximately $100,000 based on contributions from the Vinyl Institute, PPFA, solvent manufacturers and solvent cement manufacturers. The group that is the most difficult so far in terms of funding the work appears to be the fabricators of pipe and pipe fittings.

He also reported that in the view of Don Goodman, there will likely be a delay in the January 1993 deadline, as the test procedure has only been carried out on solvents themselves but not with substrates. Don Goodman indicates that he expects that it will take them to the end of this year, before work involving substrates is completed. Further, he noted that other materials other than solvent cements must be evaluated for their role in air emissions and this could take additional time.

As regards governmental affairs, it was noted that Debbie Neale, who heads the subcommittee has met with the attorney in California and is satisfied that she is properly "plugged in" to the process. Finally, communications are being handled through Dick Church of PPFA.

Roy Gottesman also reported that Don Goodman believed that as a result of work carried out at IPS, it would likely not be necessary to carry out any original technical work to determine whether the solvent cements were either chemically bound or trapped in the bond, so that emissions from the solvent cemented joints could not occur.

Martin White indicated that from his conversation with Don Goodman, some $40,000 will likely end up being used for lawyer's fees and approximately $30,000 could be necessary for outside technical/consulting work.

X. CODE MATTERS

Roy Gottesman reported on a telephone conversation that he had had with Pat Toner of SPI on August 27th regarding the retaining of Joe Zicherman by SPI rather than the Vinyl Institute. He noted that when Fred Clarke was no longer available to consult with the Vinyl Institute and represent it at BOCA and SBCCI, he had discussed with Pat Toner coverage for those code bodies as well.

On the assurance that the Vinyl Institute interests at ICBO, BOCA and SBCCI would be handled by Rich Gottwald and SPI-retained consultants, Roy indicated that he had agreed to split the costs for retaining Joe Zicherman and IFT to consult for SPI at IAPMO during the current fiscal year. This will amount to $3,000 plus one-half of the receipted expenses.

Inasmuch as the current budget would allow the payment of $1,000 per month or $12,000 per year for Joe Zicherman to cover both ICBO and IAPMO during the current fiscal year, this new arrangement will allow the Vinyl Institute to save some $6,000 in consulting fees with IFT this year. This is in addition to the money that will be saved by not retaining Benjamin/Clarke to monitor the other codes. It was noted that any arrangements for future years will have to be negotiated with Pat Toner and SPI for the next fiscal year.

Discussion with briefly held in reference to the ABS-PVC-DWV pipe reportedly made by Genova and which was listed by NSF under ASTM Standard D2661. Roy Gottesman reported that information had been received from NSF under an advisory dated May 22. NSF indicated that it had received questions regarding the appropriateness of referencing this ASTM specification

for this new product development of a co-extruded pipe made with an ABS outer wall and a PVC inner wall.

NSF has referred this matter to ASTM and has asked for clarification. NSF has taken the position if ASTM confirms that ASTM D2661-90 is not the appropriate standard for this pipe, they would modify their certification accordingly. It was noted that the next meeting on ASTM certifications will not be held until November 2 in San Diego.

XI. MEDIUM DENSITY POLYETHYLENE MONITORING

Peter Lloyd reported that he had no further information and has some 30 years of information to review and hopes to complete this by the end of the year.

There was brief discussion on the new AWWA standard covering polyethylene pipe. If was noted that Dave Crowson had sent a letter to Robert Lamson at AWWA on July 26 initiating an appeal of the Standard Council's decision concerning the issuance of AWWA Standard C906, which does not require pressure testing. Further information can be found in Bob Walker's letter dated July 31 and attachments thereto which are appended to these minutes as Appendix C. Bob Walker has also faxed the Crowson letter to the president of AWWA and it is hoped that he will intervene and delay the issuance of C906 standard until it is determined whether hydrostatic testing is necessary as a part of this new standard for polyethylene pipe and fittings.

The question was asked if an appeal is denied or is not heard what should be the position of PVC pipe producers on this new standard? Generally, it was the consensus of the group that the positive features of PVC should be promoted rather than a negative campaign against polyethylene.

Assignment:

Peter Lloyd took the assignment to review old literature relating to polyethylene pipes to determine if there is anything that would suggest that hydrostatic testing should be incorporated in the C906 standard.

XII. ASTM ACTIVITIES UPDATE

Peter Lloyd reported that within ASTM D-20, there are no active projects to write material standards to recycle PVC. The analytical committee is now looking at methods for assessing contamination in recycled PVC.

Peter Lloyd also reported that he is involved in ASTM F17, which has an active project to write a specification for

perforated drainage pipe. It is their hope to have something available to submit for comment at the November ASTM meeting.

Roy Gottesman suggested that it was not too early for the group to start thinking about projects involving recycling of durable products such as PVC.

XIII. NEW BUSINESS

Mike Barish reported that he had asked and Bob Novick had agreed to accept the position as Vice-Chairman of PRO.

Roy Gottesman presented an update on the status of expenditures for the Pipe Resource Organization for the first 3 months of the current fiscal year, which indicated that the expenditure rate, pro-rated to the end of this fiscal year was on target. Detailed information can be found in Appendix D.

There was brief discussion on plumbing installation costs based on data published by RS Means Company and that used by IFT in their update of the cost/benefit study.

Roy Gottesman noted that the information presented in his letter to Mike Barish dated August 12th indicated that while there were minor differences between the Means data and that of IFT, the differences are not large enough to negate the overall cost benefit in using PVC pipe versus metal pipe. No further action on this subject is needed.

In connection with a problem brought to the attention of Peter Lloyd of BFGoodrich Company by a customer, Roy Gottesman indicated that he had written to Dick Church regarding PVC threaded joints seeking their advice and help regarding the clauses in IAPMO which seem to discriminate against PVC female screw fittings.

Assignment:

Mike Barish took the assignment to check with Dick Church, as no response had been received on this letter. Further, he will determine when Dick Church plans to visit Uni-Bell, as he had been invited to do.

IX. REVIEW OF ASSIGNMENTS

Chairman Michael Barish reviewed all of the assignments agreed to during the meeting:

Mike Barish took the assignment to check with Dick Church, as no response had been received on a letter regarding PVC female screw fittings. Further, he will determine when Dick Church plans to visit Uni-Bell, as he had been invited to do.

Ron Bishop and Bob Walker will discuss with the Uni-Bell Market Development Committee the desirability of a joint meeting with polyethylene pipe producers. If they feel that this is desirable, they will so advise Roy Gottesman, who agreed to talk with Stan Mruk about such a meeting.

Ron Bishop and Bob Walker have the assignment to review this planned program with the Uni-Bell Market Development Committee on September 17 and then to advise Vinyl Institute PRO how we can be of help to them in promoting PVC pipe for these expanded uses.

Roy Gottesman accepted the assignment to give the slide presentation that he will give at the SBCCI Seminar in Tampa on October 30 at the next PRO meeting.

Roy Gottesman and Dan Stanowick will prepare an appropriate letter to go out to the influentials some time in November with the prospects lists and new literature.

Roy Gottesman will talk with John York of EVC to see whether EVC is planning to present a paper at the Plastics Pipe VIII Conference and will advise PRO. Dependent on EVC's decision, the desirability of the Vinyl Institute sponsoring a paper can be decided.

Peter Lloyd took the assignment to review old literature relating to polyethylene pipes to determine if there is anything that would suggest that hydrostatic testing should be incorporated in the C906 standard.

PRO members are to review this updated technical bibliography and provide Dan Stanowick with changes, if any, no later than October 1.

PRO members on the Communications Subcommittee are to review the draft press release on the IFT Cost/Benefit Study and provide comments to Dan Stanowick.

PRO members are to provide Bob Walker with any suggested changes or revisions on the AWWA questionnaire no later than August 30.

Dan Stanowick will determine whether there is still time to place ads in annual editions of Municipal Index and Public Works Manual or whether their advertising deadlines have been passed.

Dan Stanowick has the assignment to make a recommendation to PRO with regard to a follow-up market research survey regarding the perceptions of PVC large diameter pipe to determine the effectiveness of the current advertising program.

Dan Stanowick will complete the revisions on the technical bibliography sometime after October 1 and send same to Al Reventas for final review before it is printed.

Dan Stanowick is to prepare a one-page synopsis to cover the summary of the IFT 1988 Cost/Benefit Study.

Dan Stanowick will provide Bob Walker with information on Constructioneer magazine and the article that they have indicated an interest in.

Dan Stanowick has the assignment to send Ron Bishop copies of all case histories used in the PRO promotional campaign.

Bob Walker will check with the Uni-Bell Market Development Committee at its meeting on September 17th to determine whether Uni-Bell would be able to fund ads in Municipal Index and Public Works Manual estimated at a cost of $4,000-$5,000 per placement, assuming that the deadlines have not been passed.

Bob Walker is to advise Dan Stanowick when the AWWA standard on C907 pipe is formally approved, which is expected in 30 days.

Bob Walker will review information from Dan Stanowick on Constructioneer magazine and if it appears that this would be a useful placement, Bob agreed to write-up such an article which could be offered to the magazine.

Bob Walker will check to see whether the PRO mailing list has been received and if not, will request Roy Gottesman to provide a second copy.

Martin White is to review the updated "influentials" list and return it to Roy Gottesman by October 1 with any changes/additions/revisions.

IX. **NEXT MEETING DATE**

The next meeting of PRO was decided to be held on Wednesday, December 4, 1991. Attempts will be made to have this meeting held at the Airport Hilton Hotel in New Orleans, Louisiana.

There being no further business, the meeting was adjourned at 4:00 p.m. on motion of Peter Lloyd, seconded by Cal Rehfuss.

Respectfully submitted,

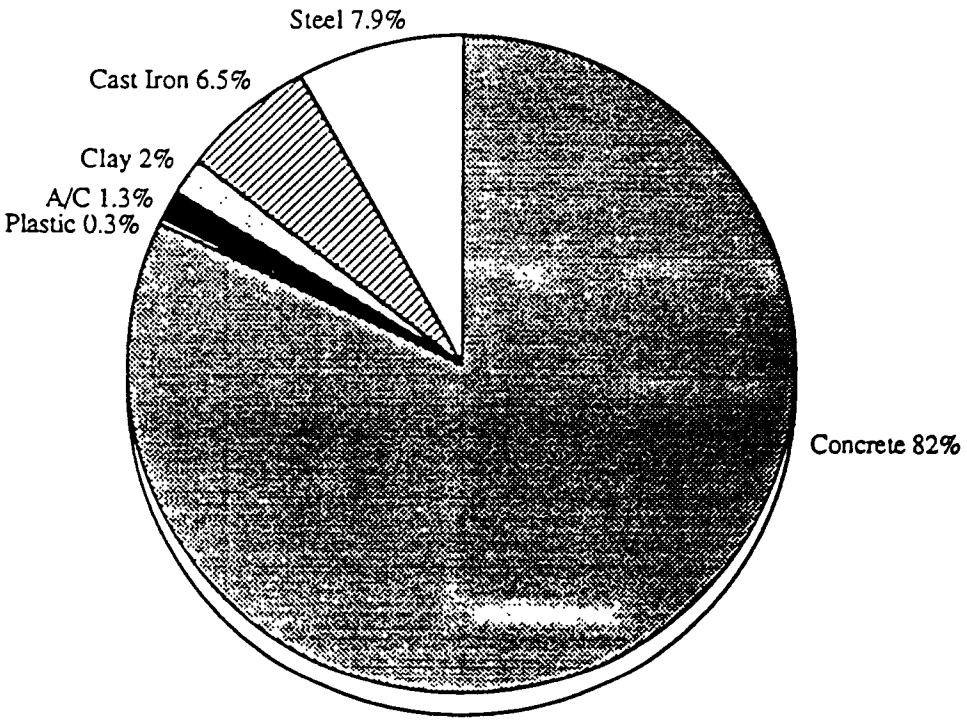
Roy D. Gottesman

Roy T. Gottesman

Appendix A

Large Diameter Pipe Market Share

(Tons)

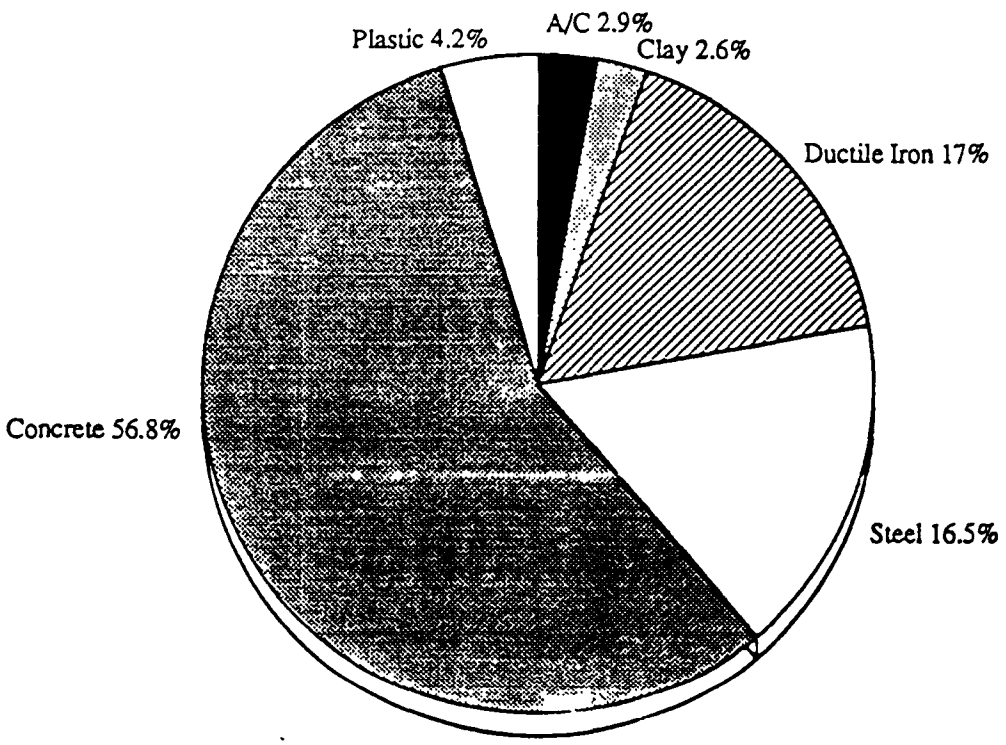


1987

CTL027013

Large Diameter Pipe Market Share

(Feet)



1987

CTL027014

1987

TOTAL CONCRETE PIPE SHIPMENTS

56,500,000 feet

19,732,800,000 pounds

$1,598,000,000

$0.081/pound

CTL027015

1987

WHERE PLASTICS STAND

Sanitary Sewer Market

14 - 24"	3.8%
Over 24"	0.14%
Overall	2.5%

Storm Sewer, Highway & Culvert Market*

Less than 4%

?

Water Supply Pipes

14 - 24"	3.9%
Over 24"	1.6%
Overall	3.4%

*Nominal Diameters 14 Inch and Larger

CTL027016

1987 DEMAND FOR LARGE DIAMETER SANITARY SEWER PIPES

Pipe Product	Nominal Diameters 14 - 24 inch	Over 24 inch
Concrete	5,960,000 ft.	5,200,000 ft.
Clay	2,160,000 ft.	388,000 ft.
Ductile Iron	1,883,000 ft.	156,000 ft.
Plastic	400,000 ft.	7,900 ft.
Totals	10,403,000 ft.	5,751,900 ft.

Total Sanitary Sewer Demand = 16,154,900 ft.

CTL027017

1987 DEMAND FOR LARGE DIAMETER STORM SEWER, HIGHWAY AND CULVERT PIPES

Pipe Product	Nominal Diameters 14 - 24 inch	Over 24 inch
Concrete	29,000,000 ft. *	12,410,000 ft. **
Steel	1,168,000 ft.	334,000 ft.
Clay	10,600 ft.	12,000 ft.
Totals	30,178,600 ft.	12,756,000 ft.

Total Storm, Highway & Culvert Demand = 42,934,600 ft.

* Nominal Diameters Less Than 36 Inch
** Nominal Diameters Greater Than 36 Inch

CTL027018

1987 DEMAND FOR LARGE DIAMETER WATER SUPPLY PIPES

Pipe Product	Nominal Diameters 14 - 24 inch	Over 24 inch
Ductile Iron	12,600,000 ft.	2,244,000 ft.
Concrete	237,000 ft.	697,000 ft.
Plastic	526,000 ft.	55,000 ft.
Steel	16,000 ft.	510,000 ft.
Totals	13,379,000 ft.	3,506,000 ft.

Total Large Diameter Water Demand = 16,885,000 ft.

CTL027019

PVC PIPE WEIGHTS

Gravity Pipe Diameters	Weight (lbs/ft)*
18"	12 - 25
24"	18 - 40
36"	35 - 75
48"	50 - 110

Pressure Pipe Diameters*	Weight (lbs/ft)**
18"	31.5
20"	39.2
24"	56.1
30"	86.6

* Pipe Stiffness = 46 lbs/in-in
** CIOD - DR 25

CTL027020

PVC MARKET POTENTIALS

Sanitary Sewer:

14 - 24"	10,000,000	ft.	150,000,000 lbs.
Over 24"	5,000,000	ft.	175,000,000 lbs.
Totals	15,000,000	ft.	325,000,000 lbs.

Storm - Highway - Culvert Pipes:

14 - 24"	30,000,000	ft.	450,000,000 lbs.
Over 24"	13,000,000	ft.	455,000,000 lbs.
Totals	43,000,000	ft.	905,000,000 lbs.

Water Supply Pipes:

14 - 24"	13,000,000	ft.	410,000,000 lbs.
Over 24"	3,500,000	ft.	200,000,000 lbs.
Totals	16,500,000	ft.	610,000,000 lbs.

TOTAL LARGE DIAMETER PVC PIPE MARKET POTENTIAL

1.8 Billion Pounds

CURRENT PIPE PRICES PER POUND

Concrete Pipe:	$0.05/pound
Ductile Iron:	$0.23/pound
PVC:	$0.42/pound

PRICE RATIOS PER POUND

PVC : Concrete
8.4/1.0

PVC : Iron
1.8/1.0

CTL027023

LARGE DIAMETER PVC "NON-PRESSURE" PIPE OPPORTUNITY

I. INTRODUCTION — R. BISHOP

- A. OUR TASK
  - 1. GLIMPSE OF VOLUME OPPORTUNITY
  - 2. INDUSTRY SERVING
  - 3. IMPROVE UNDERSTANDING
  - 4. NON-PRESSURE
    - a. SANITARY
    - b. STORM SEWER
    - c. HIGHWAY UNDERDRAIN, CULVERT, CROSS DRAIN

CTL027024

II. Market Opportunity - Size — R. Walker
Character

III. Where is the Industry — R. Bishop
- A. Standards
- B. Technology
- C. Established Products
- D. The Pretenders

IV. Can We Win? — R. Bishop
- A. Obstacles
- B. Competitiveness

V. What Can VI & Uni-Bell Do? — R. Bishop

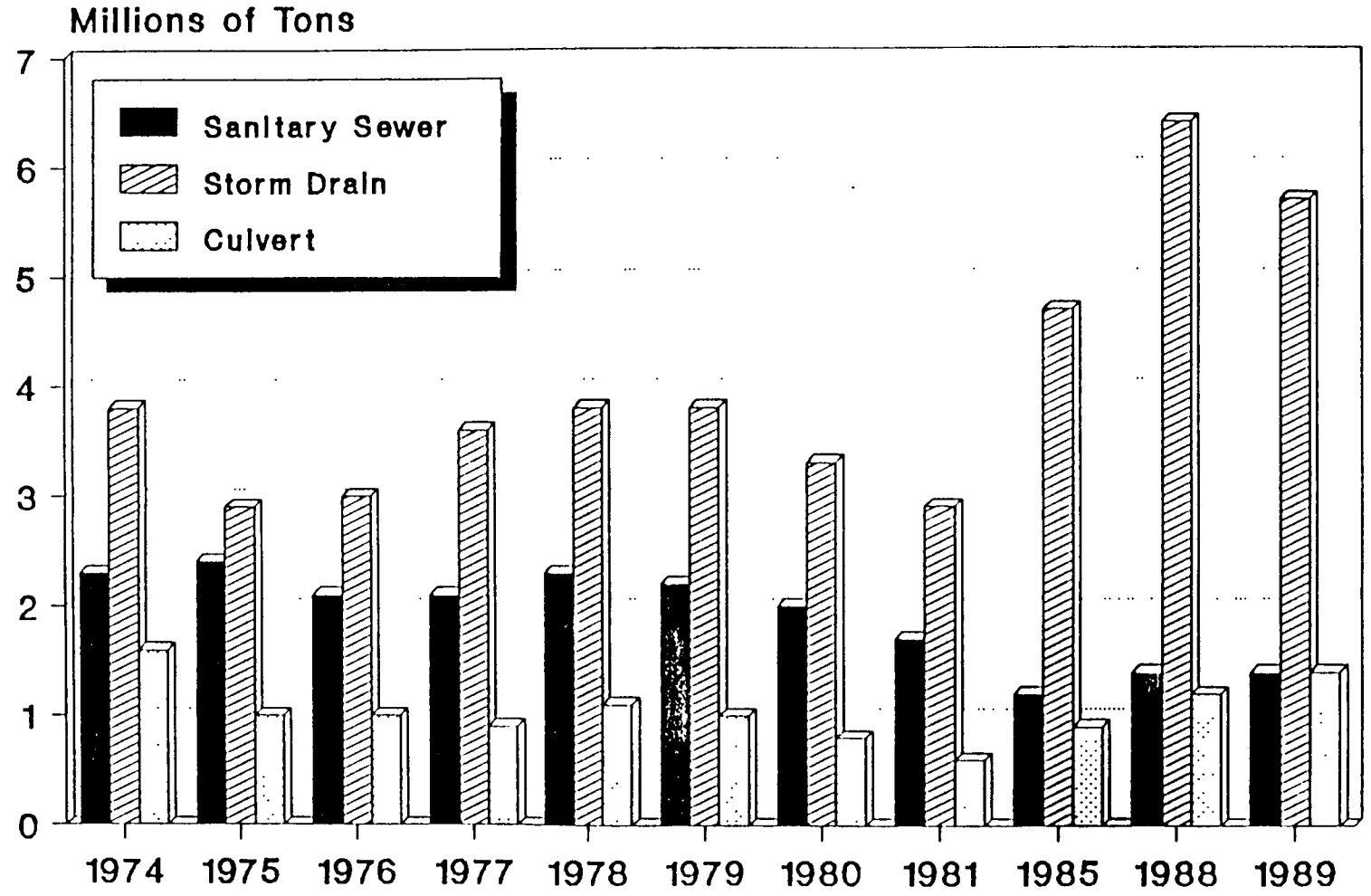
CTL027025

PVC NON-PRESSURE PIPE STANDARDS

STANDARD DESIGNATION	DESCRIPTION	DATE
SEWER		
ASTM D3034	4"-12" PVC	1972
	15" PVC	1975
ASTM F679	18"-27" PVC	1980
	30", 33", 36"	1984
ASTM F789	4"-18", T1, T2, T3	1982
ASTM F794	18"-48" ID Control	1983
	4"-15" ID Control	1988
	Closed Profile	1989
ASTM 949	A2000, 4"-8"	1985
	10"	1990
ASTM F894	PE 18"-120"	1985
HIGHWAY		
ASTM F758	4"-8" Underdrain	1982
ASHTO M278	4"-18"	198
AASHTO M304	4"-48" Culvert	1987
	General Stiffness Classes	1991
STORM SEWER		
UNI-B-?	Under Development Currently	

CTL027026

ACPA MEMBER PRODUCTION OF ROUND PIPE BY END USE



CTL027027

GRAPH III

THE ESTABLISHED PRODUCTS

SANITARY SEWER

CONCRETE	ASTM C14 (NON-REINFORCED 4"-36")
	ASTM C76 (REINFORCED 12"-144")

CULVERT & HIGHWAY DRAINAGE

CONCRETE	ASTM C14
	ASTM C76

STORM DRAIN

CONCRETE	ASTM C14
	ASTM C76
	ASTM C118 (4-24", 25' HEAD)
	ASTM C412 (4-36", DRAIN TILE)

CTL027028

LARGE DIAMETER NON-PRESSURE PIPE

TECHNOLOGY	PVC	PE
SOLID WALL EXTRUSION	36	60
SPIRAL WINDING		
J-M	48	--
RIB LOC	18	--
PETZETAUIS (CARLON, SCEPTOR, PHILLIPS, VASSALLO)	48	48
BAKU (SPIROLITE)	--	120
FORMING (SMOOTH ID)		
SOLID RIB (PWP, UPONOR, ETI)	21	--
HOLLOW RIB (KONTEC, ADS)	12	27
CORRUGATED		
HAGLER, ETC.	8	24

CTL027029

THE MARKET CONTENDORS

(SIZES 18" +)

PVC

	STANDARD	SIZE
PROFILE WALL		
CARLON	ASTM F794	21-48"
SCEPTOR	ASTM F794	8-30"
VASSALLO	ASTM F794	30-48"
J-M	ASTM F794	18-48"
ETI	ASTM F794	8-21"
PWP	ASTM F794	8-18"
LOC PIPE	ASTM F794	8-18"
CANRON	ASTM F794	18-48"

PE

HOLLOW PROFILE (SMOOTH ID)		
ADS	NONE	4-27"
HANCOR	NONE	4-27"
SPIRAL RIBBED		
SPIROLITE/PLEXCO	F894	12-120"
SPIRAL (SMOOTH OD)		
PHILLIPS	NONE	18-60"

CTL027030

COMPETITIVENESS

RCP (C76, CLASS III)

- BARE
- T-LOCK

RCP (C76, CLASS V)

- BARE
- T-LOCK

PE (F984)

- CLASS 100
- CLASS 160

PVC (F794)

- OPEN PROFILE
- CLOSED PROFILE

CTL027031

OBSTACLES/OPPORTUNITY

ENGINEERING SALE

- SPECIFICATION
  - BEDDING
  - STIFFNESS
  - CONCRETE PROTECTION
- FLEXIBLE PIPE?
- HIGHER RISK?
- LONGEVITY

TECHNICAL SALESMAN

- SKILL
- TIME
- BACKUP
- PROMOTION
- PLASTIC/COORDINATION LACK

CTL027032

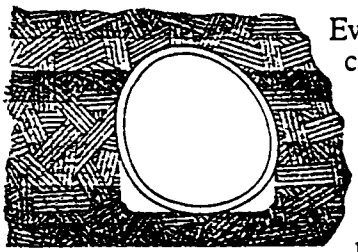
HOW CAN VI/UNI-BELL COOPERATE?

- EDUCATION
- UNIFY INDUSTRY
- RESPOND TO CONCRETE NEGATIVE CAMPAIGN
- PROMOTE VINYL ADVANTAGES
- PIVOTAL CITY/ENGINEER
- CASE HISTORY SUCCESS
- TRANSLATE SMALL TO LARGE
- POLITICS

Specify Plastic Pipe... What Could Go Wrong?

To perform according to specifications, flexible plastic pipe must be installed properly. This is no simple task, since the plastic pipe must have uniform side support from the soil adjacent to the pipe. But as you know, on-site, you have very little control over this installation.

Improper Installation

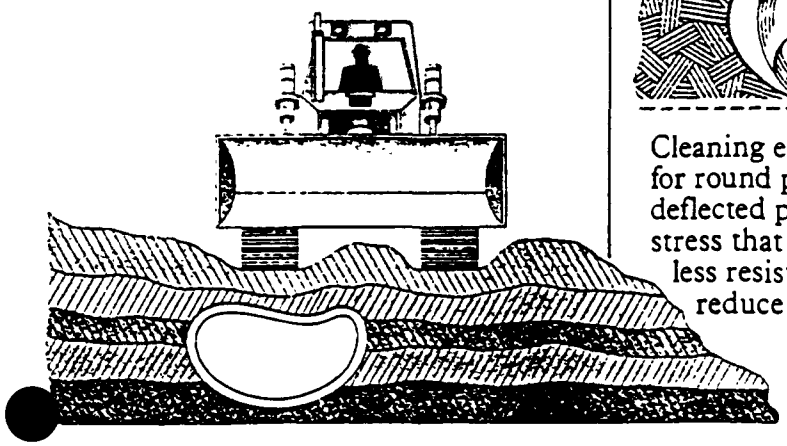


Even the best contractors may have difficulty providing uniform side support for plastic pipe. Changes in moisture levels, soil composition and density can mean severe problems.

Problems Caused By Improper Installation

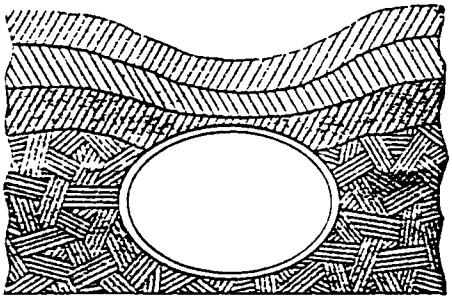
Increased risk of collapsed pipelines

There is no long-term proof that large diameter plastic pipe under excessive load and severe deflection will survive.

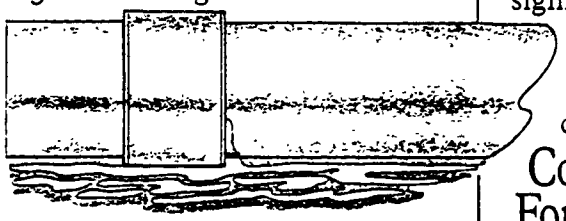


Surface settlement

Pipe deflection can cause subsurface materials to settle.

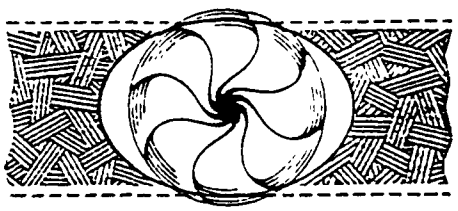


Joint leakage



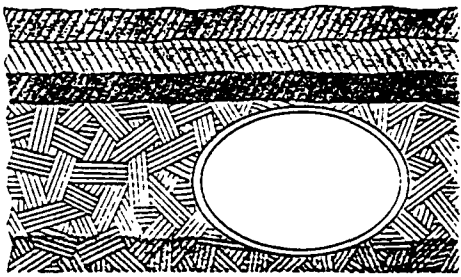
Differential rates of deflection at pipe joints can cause joints to open. The resulting leakage can further undermine the pipe, causing even greater deflection and leakage.

Other dangers



Cleaning equipment designed for round pipe can damage deflected pipe. Deflection causes stress that can make the pipe less resistant to chemicals and reduce its hydraulic capacity.

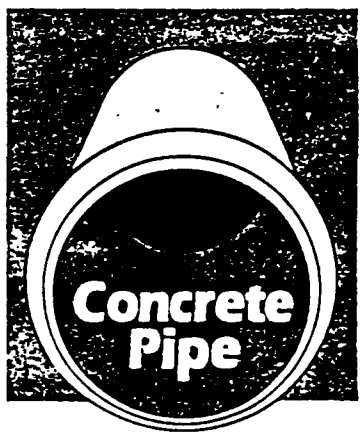
No Control Over Groundwater



Changes in the water table during or after installation can significantly alter soil properties. This could diminish side support for plastic pipe leading to severe pipe deflection after installation.

Concrete Is Far More Forgiving

Concrete pipe has an inherent structural rigidity and a proven record of performance that goes back more than 100 years. When you're specifying pipe, why take chances with plastic? Significantly reduce your risk factors with the proven reliability of concrete pipe.



It Stays In Shape

American Concrete Pipe Association

8300 Boone Boulevard • Vienna, Virginia 22182-2689 • (703) 821-1990

Visit our WPCF Toronto Conference booth 1703

CTL027034

Write in 13 on Reader Service Card

R. BISHOP
JUL 11 1991

CARLON VYLON SCORES
IN SAN LUIS OBISPO, CALIFORNIA

12,000 LF
OF 30" - 36" - 48"
GRAVITY SEWER

PLUS

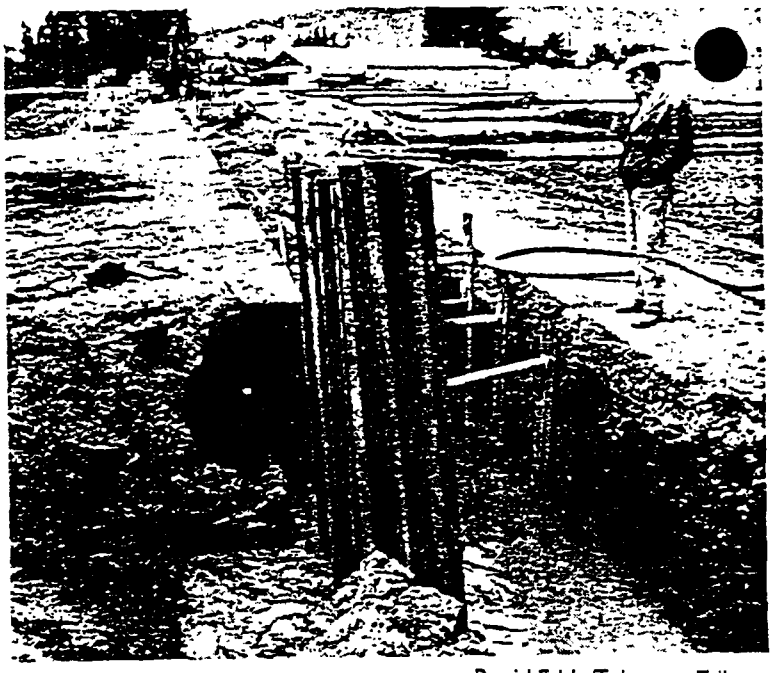
AN ADDITIONAL 400 LF OF 30" VYLON HAS BEEN USED TO REPLACE CONCRETE WHICH COLLAPSED DURING NEW 48" CONSTRUCTION. MORE CONCRETE WILL LIKELY HAVE TO BE REPLACED.

THE "NEW PIPE" REFERRED TO IN THE SAN LUIS OBISPO TRIBUNE ARTICLE IS CARLON VYLON.

R. J. Capkovic
National Product Manager

Bob Capkovic

CTL027035



David Eddy/Telegram-Tribune
Project Manager Bill Coates surveys collapsed line Wednesday.

SLO sewer line caves in near plant

By David Eddy
Telegram-Tribune

A 10-foot section of the main sewer line leading into San Luis Obispo's sewage treatment plant collapsed Wednesday morning.

There was no effect on sewer service, said Utilities Director Bill Hetland.

The 30-inch main, which carries all of the city's sewage into the plant, broke down at about 9 a.m., he said.

The pipe likely collapsed because it was disturbed by nearby construction, said Hetland. Workers were digging a trench next to it for a new pipe that is part of the $30 million upgrade and expansion of the sewer system.

The trench did serve to contain the sewage flow, and none of it escaped into the surrounding area along Prado Road.

Besides the construction, Hetland said the pipe may have been corroded by the potent hydrogen sulfide gas put off by the sewage. The 30- to 40-year-old pipe was due to be replaced in a few years, he said.

One the new pipe is completed, the old pipe will serve the east side serve the west side.

Project Manager Bill Coates said pumps would be rented to connect two manholes and bypass the area. City workers were already checking the remaining 400 feet of pipe into the plant to see if it's at risk of failing, Coates said.

Work on the new 48-inch sewer main has only just begun, according to Utilities Engineer Gary Henderson. Over the next nine months, workers will head north from the plant digging a trench and laying pipe.

The route will take it through Elks Lane, Higuera, Marsh and Nipomo streets to Chorro Street. The pipe will then go underneath Highway 101 and will reach its end at Montalban Street and Hathway Avenue.

No streets will be dug up in the downtown area between Nov. 15 and Jan. 1 to avoid disrupting the Christmas shopping season, said Henderson.

The work, which is being done by Dalton Construction Co. of Hayward, was ordered by the state Regional Water Quality Control Board. The city has been fined several times when sewage overflowed during winter storms into

UNI-BELL PVC PIPE ASSOCIATION

2655 Villa Creek Drive, Suite 155
Dallas, Texas 75234-7362
Phone (214) 243-3902 Fax (214) 243-3907

July 31, 1991

TO: Uni-Bell Board of Directors
Uni-Bell Market Development Committee
Uni-Bell Associate Members

FROM: Bob Walker

SUBJECT: It's Not Over Until It's Over - AWWA C906

A new AWWA standard covering Polyethylene (PE) pipes and fittings (4" through 63") may not be published as early as had been anticipated. By memo of July 15, we had advised you that Mr. Crowson's appeal of the proposed standard, designated AWWA C906, had been overridden. Mr. Crowson has contacted us regarding whether he should appeal this latest action.

The enclosed letter to AWWA should initiate his appeal of the Standard's Council's (SC's) decision. This appeal will go to AWWA's Executive Committee (EC). The EC must first agree to hear the appeal and then schedule a hearing. The EC may affirm the SC action or vacate the action and return it to SC for reconsideration. The SC may return the matter to the polyolefin committee.

The EC is the final level of appeal within AWWA.

This action will delay publication of AWWA C906 and could draw enough attention to the issues, that the standard would have to be revised. Revisions would necessitate re-balloting and result in major time delays, i.e., a year or more.

We are staying in touch with Mr. Crowson and will keep you posted.

RPW/vac

Enclosure

cc: Roy Gottesman
Peter Lloyd
Art Kahn

CTL027036

David L. Crowson, P.E. 2416 Gem Mary Ct. Orlando, FL 32806 (407) 859-2734

July 26, 1991

Robert R. Lamson, P.E.
Director of Standards--AWWA
6666 West Quincy Avenue
Denver Co. 80235

Dear Mr. Lamson:

SUBJECT: PROPOSED STANDARD C906

Your letter of 7/19/1991, indicates that Standards Council simply reaffirmed their previous approval of this document. I presume the comments that I made were discussed however the rationale to accept or reject any part or all of them have not been shared with me. Absent the REASONS from Council why any or all of the content of my comments were rejected by Council, then I cannot agree that they have been addressed by Council and the matter stands precisely where it did when Council first approved the document for publication. In your letter of 9/28/90, you have opined that my comments raised "several substantive issues", so it would seem that Council would have made some contribution or at least given an explanation as to its position.

Some of my review comments were previously addressed by the committee. Even so their response to the central issues of testing, fittings and use/history can hardly be considered as sufficiently objective to justify such wide departures from requirements that Council imposes on other pipe and fitting materials. Since Council has failed to comment on any of the "several substantive issues", then I do think that they should be given the opportunity to detail their position, or in the alternative, the Executive Committee should be made aware of these "several substantive issues", together with the implication that the inconsistencies may have upon the Association.

The principle issues here are summarized as follows:

1. Pressure testing is not required by this proposed standard. It is required by other AWWA standards viz. PVC, Ductile Iron etc.
2. A separate standard is not required for fittings as required of PVC, D.I. etc. Even so, two types of fittings (moulded and fabricated) are incorporated in the body of this standard.
3. The 'factor of safety' is not uniform throughout polymer pipe products standards of AWWA and to say that this will be addressed in the future is of dubious merit. Such an effort was made in 1968 and still has not been resolved.
4. Absent the Appendix, surge determinations cannot be properly evaluated by information contained in the proposed document. If the proposed standard will rely on a forthcoming manual for these determinations, then delay of the proposed standard pending approval and issuance of such a manual should be considered.

5. The proposed standard covers 22 different pipe sizes ranging from 4-inch to 63-inch nominal diameter. The question as to the satisfactory history of use by responsible domestic municipal utilities of all of these sizes of P.E. pipe manufactured to the requirements contained in the standard has not been addressed. Granted, many miles of P.E. have been used in the gas industry (largely low pressure) and some P.E. pipe, particularly in smaller sizes (tubing), in the pressure water industry. Even so, these water applications have prompted a large number of law suits resulting in large settlements in many instances. Consistency in the application of criteria by the Council seems prudent here.

Several other comments not having the significance of the above seem appropriate.

Can an objective reviewer accept the idealized statement contained in earlier exchanges.....

"the fusibility of polyethylene, the nature of the pipe extrusion process, and the quality control procedures currently employed preclude the possibility of producing pipe with structural flaws that can result in weeping, or small leaks, or some other defect that is discoverable by the hydrostatic testing of each length.".....

..... as an acceptable substitute for proof testing. This is most troublesome since the very next sentence (in the response narrative rebutting the need for proof testing) details the value of such testing.

In light of the large number of cases before the courts (117) involving failures of plastic pipe and the huge settlements that are being made (and these for small pipe) I urge prudence in the rush to standardize on new technology for large diameter polyethylene pipe, which, as far as I know is unproven by use in the USA in these sizes in pressure water systems. Further, the position of AWWA in presenting a Standard for use and acceptance, which is inconsistent with many of the other "proven" provisions of AWWA pipe and fitting standards should prompt a conservative pause.

In closing, I would like to see the practice of the inclusion of an appendix continued. Failure to do so may limit some standards to little more that a listing of references where data can be obtained. The usefulness, value and quality is, in my opinion, thereby diminished.

Bob, please forward this letter to either the Standards Council or the Executive Committee or both as you see fit. I will not withdraw my comments which I still consider pertinent and which, if ignored, may work to the pecuniary detriment of the Association.

Page 3, C906 Comments D. L. Crowson 7/26/91

Since I did not originally intend to file an appeal (and have stated so several times) I see no necessity to either advance nor withdraw any unintended appeal. Hopefully the Association can use my comments to a beneficial good and they can term them whatever they wish....it is O.K. with me. As far as I am concerned, they will stand as questions of valid concern that are as yet not fully resolved.

CORDIALLY YOURS

D. L. CROWSON, P.E.

P.S. Am enclosing a summary of our trip to England which you may find interesting and, in some parts, even amusing..... dlc

Appendix D

August 27, 1991

PIPE RESOURCE ORGANIZATION -- STATUS OF EXPENDITURES

	Billed through 7/31/91	Additional Bills Rec'd thru 8/27/91	Total Y-T-D	Pro-rated to end of FY '91-'92
Edward Howard & Co.	$3,151.70	$3,925.76	$7,077.46	$42,464.76
Printing (St.Clair Graphics)	2,103.00	209.00	2,312.00	9,248.00
Literature Fulfillment (ADH)	1,289.90	155.22	1,445.12	5,780.48
		Sub-total	$10,834.58	$57,693.24
Uni-Bell	25,000.00	--	25,000.00	50,000.00
		Total	$35,834.00	$107,693.24

Approved Budget for FY '91-'92

Publicity	$ 20,000
Advertising	17,000
Reprints/ Fulfillment	7,500
PR Counsel/ Acct.Admin.	15,500
Sub-total	$ 60,000
Uni-Bell	50,000
Total	$ 110,000

R.T. Gottesman
8/27/91

CTL027040