

PIPE RESOURCE ORGANIZATION
MARKET RESEARCH SURVEY

Prepared for:

Pipe Resource Organization of The Vinyl Institute

September 1992

CTL029037

INTRODUCTION

Objectives

- To determine the impact of the communications program conducted by The Vinyl Institute and The Pipe Resource Organization in terms of—

Correcting misperceptions about the fire performance of PVC pipe

Promoting the good performance properties of PVC pipe

- To determine the recognition of the efforts of The Vinyl Institute and The Pipe Resource Organization in providing information about PVC pipe;
- To determine the best communication channels for delivering information about PVC pipe to The Vinyl Institute's and The Pipe Resource Organization's target audiences.

Research Method

The survey of industry members was carried out using personal telephone interviews with executives and managers from The Pipe Resource Organization's target audiences.

In total, 250 industry interviews were completed for this survey.

In the initial part of the questionnaire, respondents were screened to determine their involvement with electrical materials.

Work Function	AWWAJ Interviews	Pipe Resource Organization Interviews	Total Interviews
Public Utility specifiers/users	50	50	100
Consulting Engineers	50	50	100
Installers	15	2	17
Code Makers	9	9	18
Manufacturers	0	15	15
Total	124	126	250

There were several important differences in the makeup of the two lists. The first was from a geographic distribution standpoint.

Region	Interviews from AWWA List	Interviews from Pipe Resource Organization List	Total Interviews
New England and Atlantic	20%	29%	25%
Central	25%	20%	22%
South/Southwest	30%	34%	32%
Mountain and West Coast	25%	17%	22%

In terms of job titles, the two lists were also somewhat dissimilar.

Title	AWWA Journal Interviews	Pipe Resource Organization Interviews	Total Interviews
Heads/Managers of Water Bodies	44%	20%	32%
Company Officers	41%	21%	31%
Engineers-Private Sector	5%	21%	13%
Engineers-Government	2%	12%	7%
Managers-Government	5%	5%	5%
Managers-Private Sector	0	9%	4%
Engineers-Water Bodies	0	6%	3%
Miscellaneous/Other	4%	4%	4%

Statistical Precision

With the samples employed, the results of this survey have the following statistical precision:

Sample	Precision
250	$\pm 5\%$
196-190	$\pm 6\%$
157-141	$\pm 7\%$
126-100	$\pm 8\%$
80-74	$\pm 9\%$
62-51	$+11\%$
38-32	$\pm 14\%$
18-15	$+20\%$

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Trade Editor Interviews

Six telephone interviews were conducted with editors of industry trade journals from a list of 11 editors supplied by Edward Howard & Company.

Nancy Zeilig, Editor
American Water Works Journal

Ron Rosencrans, Editor
Underground Focus

Dave Hodges, Editor
The Florida Specifier

Greg Norton, Managing Editor
Pipelines & Utility Construction

Edward Rodie, Editor
Public Works

Jim Harrington, Technical Editor
Plastics in Building Construction

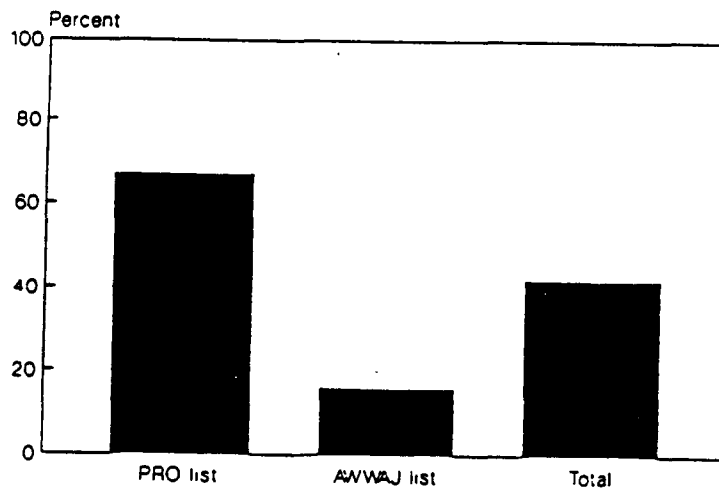
CONCLUSIONS

1. The Vinyl Institute's communications program is reaching its audience.
 - Awareness of The Vinyl Institute among those who receive its communications is very high

67% PRO list
16% AWWAJ list

On an overall basis, 42 percent of the total group surveyed knew of The Vinyl Institute. (Q.11, pg. 43)

VINYL INSTITUTE AWARENESS



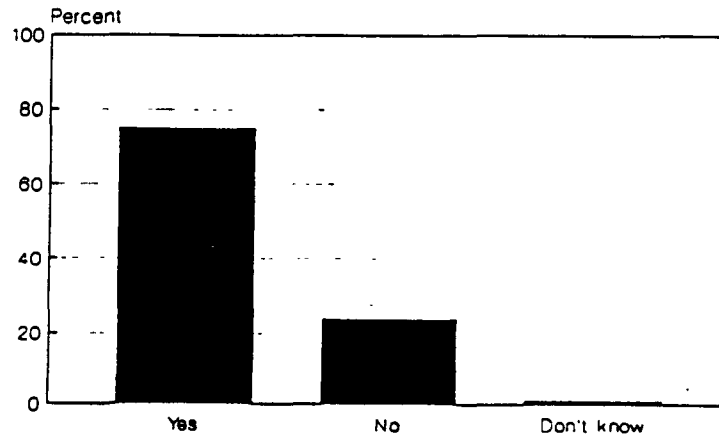
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- Most people who are aware of The Institute recalled having seen or received information on PVC pipe from the organization.

75% Yes

(Q.12, pg. 45)

RECALL OF COMMUNICATIONS By those aware of Vinyl Institute



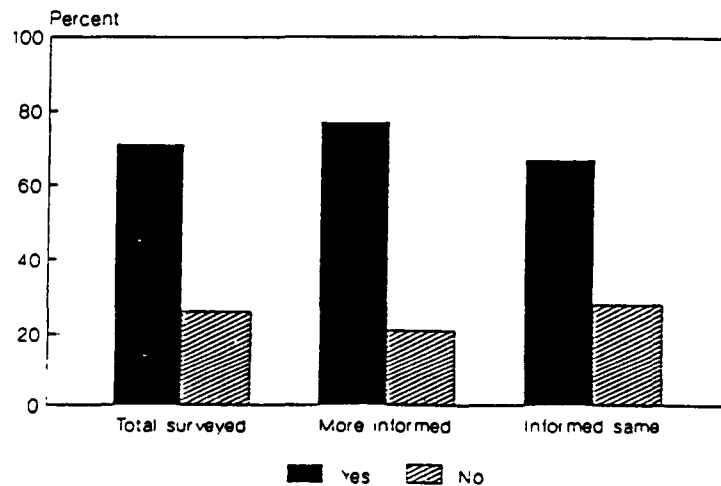
- Articles or advertising on PVC pipe had very good awareness and contributed to being better informed about the product.

Over seven out of ten (71%) of all those interviewed recalled seeing trade journal articles on successful installations or distribution systems using PVC pipe. Recall was higher (77%) among those more informed about PVC pipe, than among those informed to about the same degree (67%).

(Q.8, pg. 37)

RECALL OF ARTICLES

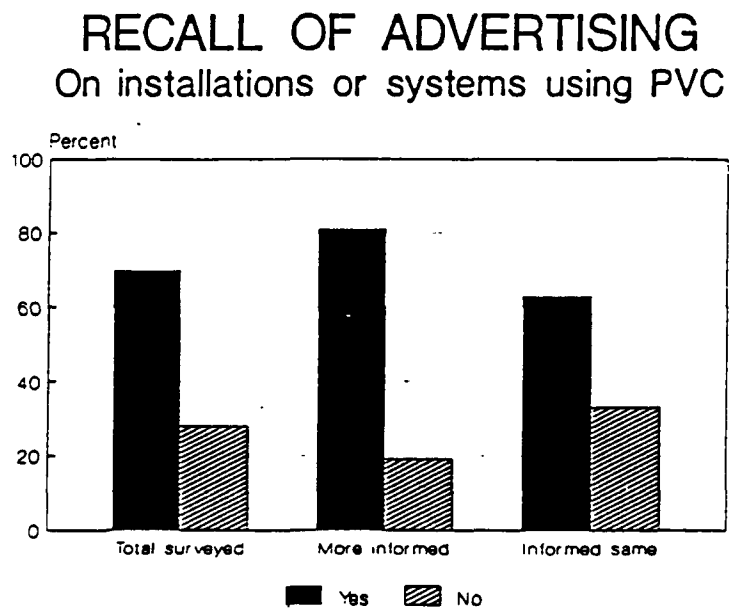
On installations or systems using PVC



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- Trade journal advertising with case histories of successful installations or distribution systems was recalled by 70 percent. It also had more recall among those who have become more informed about PVC pipe (81% vs. 63%).

(Q.9, pg. 39)



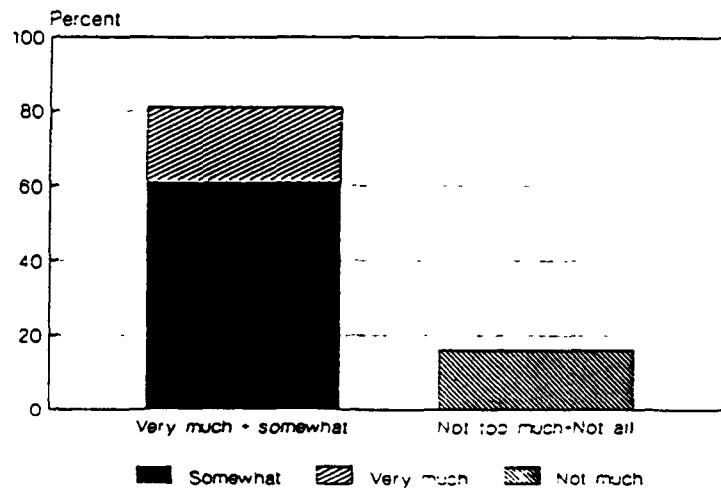
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- The Vinyl Institute's communications have increased knowledge and changed attitudes.

81% Increased their knowledge of PVC pipe's performance characteristics Very much or Somewhat.

(Q.12a, pg. 47)

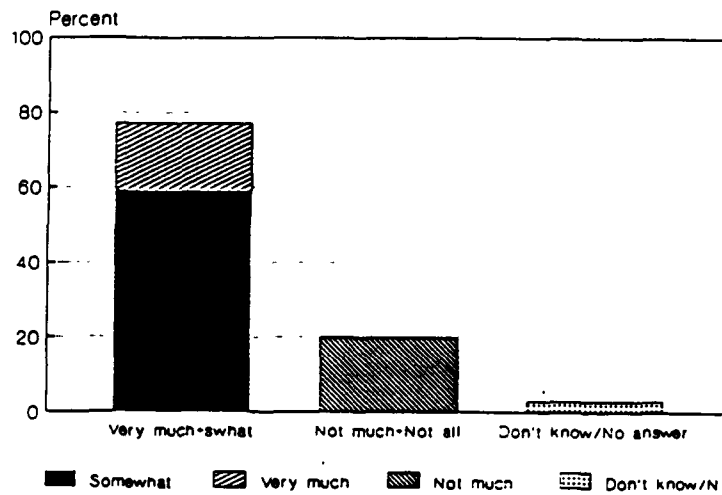
VI INCREASED KNOWLEDGE Among those recalling VI communication



Seventy-seven percent say that this information contributed to their more favorable attitude toward specifying or using PVC pipe.

(Q.12b, pg. 50)

VI IMPROVED ATTITUDES Among those recalling VI communication

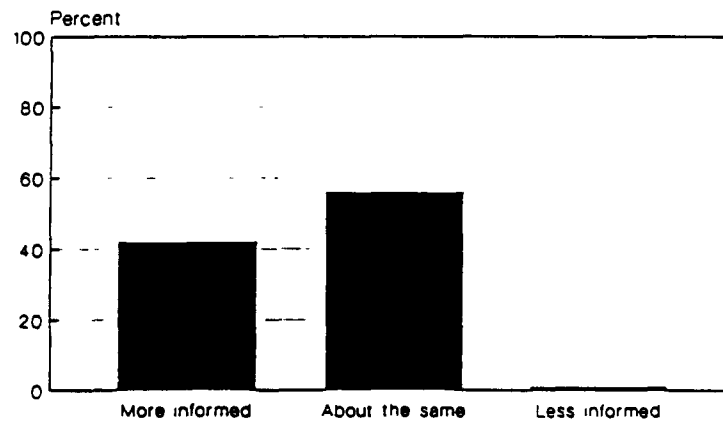


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Moreover, 42 percent of all those surveyed, whether they were aware of The Vinyl Institute or not, feel more informed about PVC pipe today than they were three years ago.

(Q.6, pg. 33)

CHANGED IN INFORMED Among total surveyed



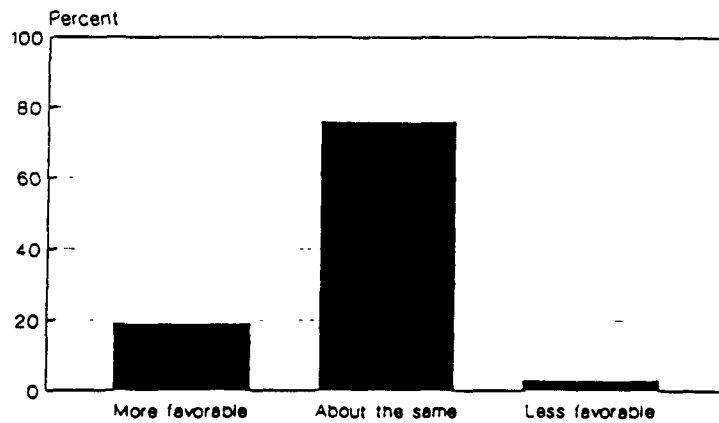
Than were three years ago

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Nineteen percent overall have developed a more favorable attitude toward using PVC pipe.

(Q.5, pg. 29)

CHANGED IN ATTITUDE Among total surveyed



Than were three years ago

- On almost every measure of evaluation those interviewed from the Pipe Resource Organization list and those aware of The Vinyl Institute are more positive about PVC pipe and rate it significantly higher.

	PRO List/ AWWAJ List	Aware VI/ Not Aware	
Favorable attitude	75%/65%	74%/66%	(Q.3, pg. 24)
More informed	49%/35%	52%/35%	(Q.6, pg. 33)
Attitude changed	25%/13%	26%/15%	(Q.5, pg. 29)
Overall Excellent or Good rating	88%/77%	88%/78%	(Q.14, pg. 54)

2. The basic premise of The Vinyl Institute communications is well proven.

- By communicating information on PVC pipe, industry members become more familiar with it and better informed about PVC pipe. Those more familiar with the use of PVC pipe consistently were more positive about PVC pipe and gave it significantly higher ratings.

For example, those Extremely or Very familiar with PVC pipe gave it significantly higher ratings on six out of ten characteristics than those just Somewhat familiar with PVC pipe. (Q.15, pg. 56)

RATING OF CHARACTERISTICS BY DEGREE OF FAMILIARITY

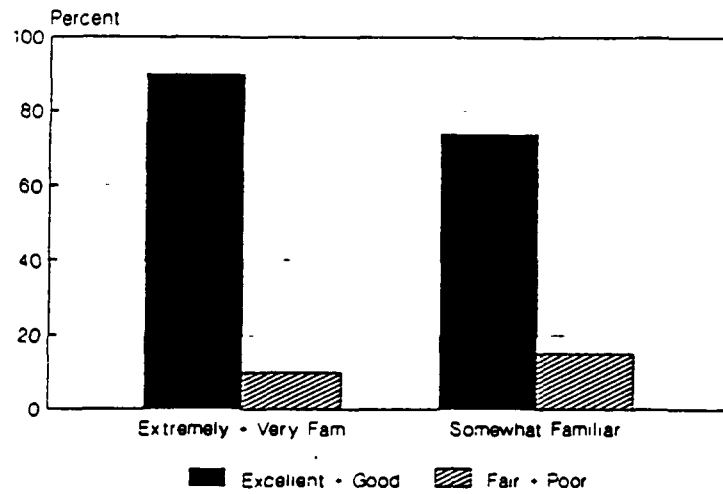
EXCELLENT PLUS GOOD SCORES					
Characteristic	Extremely and Very Familiar	Somewhat Familiar	Difference	Not Familiar	Difference
Weight and handling ability	100%	96%	+ 4	83%	+17
Resistance to corrosion	99%	93%	+ 6	83%	+16
Resistance to electrical, electrostatic and galvanic interaction	96%	92%	+ 4	78%	+18
Ease and economy of installation	94%	84%	+10*	78%	+16
Resistance to leaching	79%	69%	+10*	50%	+29*
Durability	81%	61%	+20*	56%	+25*
Resistance to permeation	76%	65%	+11*	50%	+26*
Strength	75%	58%	+17*	39%	+36*
Tapping properties	65%	46%	+19*	39%	+26*
Ease of locating PVC pipe after it has been installed in the ground	17%	9%	+ 8	11%	+ 6

*Difference statistically significant

Ninety percent of those Extremely or Very familiar with PVC pipe rated its overall performance as Excellent or Good, compared with 74 percent of those who are no more informed than they were in the past.

(Q.14, pg. 54)

OVERALL PERFORMANCE By Familiarity with PVC Pipe

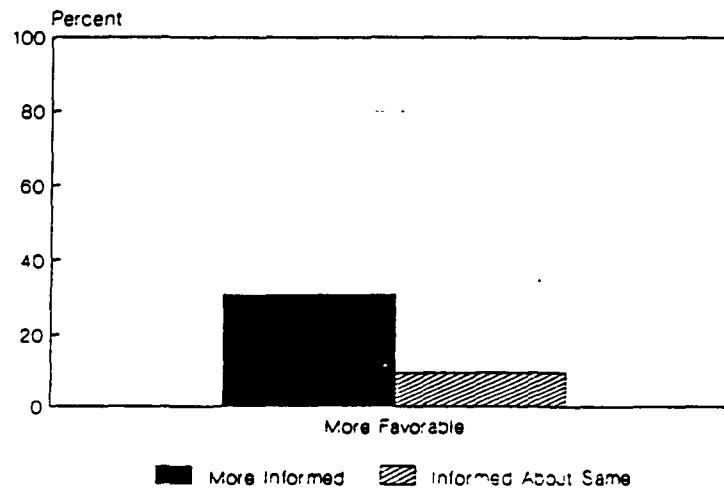


Those more informed about PVC pipe are more likely to use it.

Those having become more informed about PVC pipe over the last three years were three times as likely to have become more favorable towards using PVC pipe (31%), than those who haven't become better informed about the product (10%).

(Q.5, pg. 29)

MORE FAVORABLE TO USE By Change In Being Informed



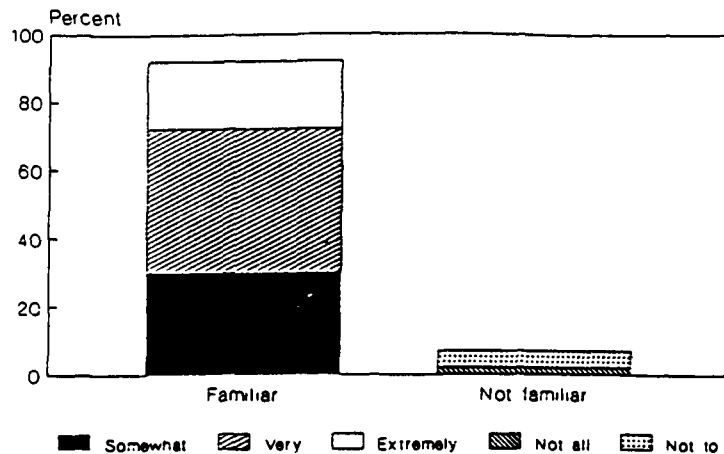
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3. Familiarity with the use of PVC pipe, and attitudes towards its use and specification are quite good.

- 92% - Extremely, Very or Somewhat familiar

(Q.1, pg. 19)

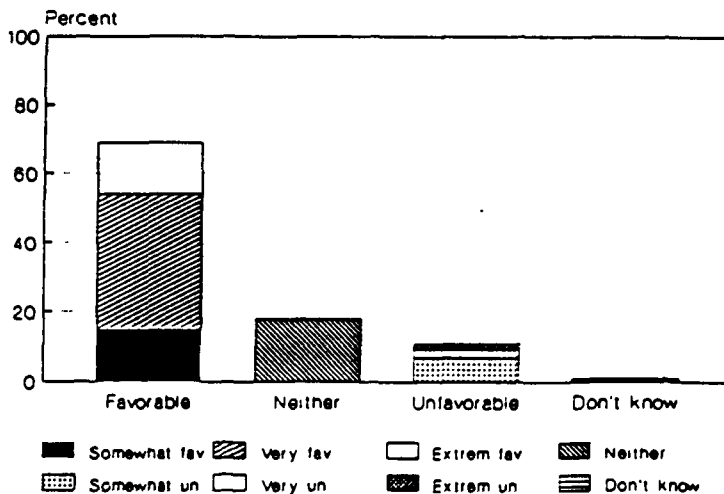
FAMILIARITY WITH PVC PIPE Among total surveyed



- 70% - Favorable attitude
- 18% - Neither favorable nor unfavorable
- 12% - Unfavorable

(Q.3, pg. 24)

FAVORABILITY TO PVC USE Among total surveyed



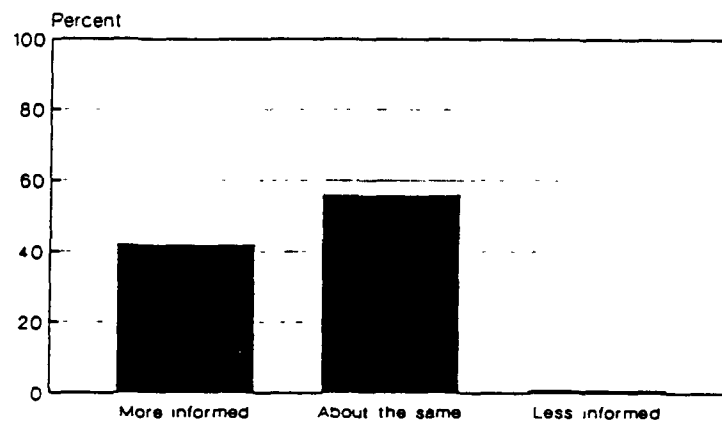
CTL029056

People are more informed about PVC pipe.

- 42% - More informed
- 56% - Informed about the same degree
- 1% - Less informed

(Q.6, pg. 33)

CHANGED IN INFORMED Among total surveyed



Than were three years ago

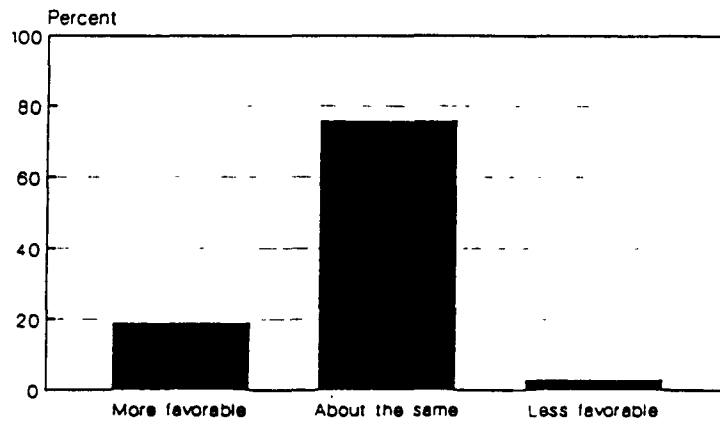
CTL029057

For a significant percent attitudes are more favorable today than three years ago.

- 19% - More favorable attitude
- 76% - About the same attitude
- 3% - Less favorable attitude

(Q.5, pg. 29)

CHANGED IN ATTITUDE Among total surveyed



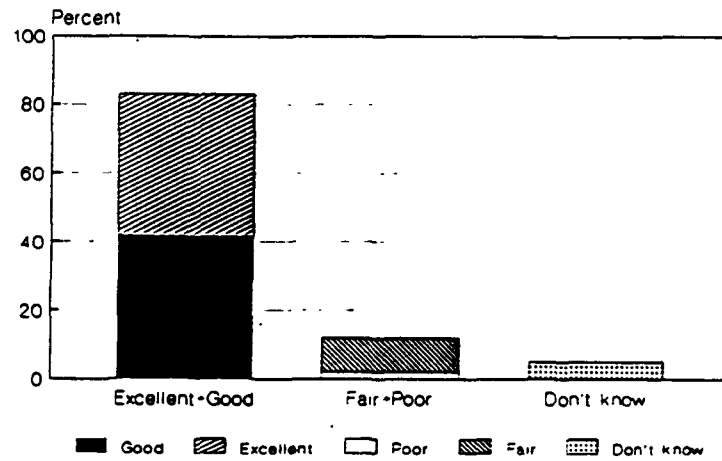
Than were three years ago

The overall performance of vinyl materials is rated highly.

- 83% - Overall performance rated Excellent or Good
- 12% - Overall performance rated Fair or Poor

(Q.14, pg. 54)

OVERALL PERFORMANCE Among total surveyed



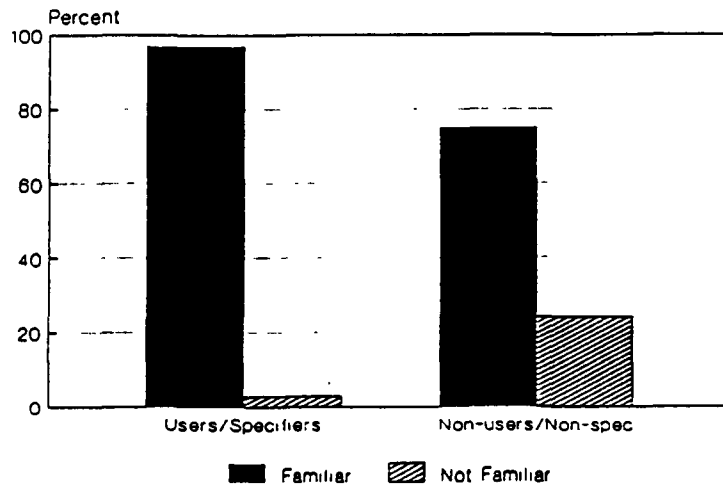
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- 4. Non-users or non-specifiers of PVC pipe are not as sold on PVC's performance or properties. They are less familiar with the product and less favorable towards its use than users or specifiers.

Familiarity with PVC pipe among non-users or non-specifiers stood at 75 percent compared to 97 percent for users or specifiers.

(Q.1, pg. 19)

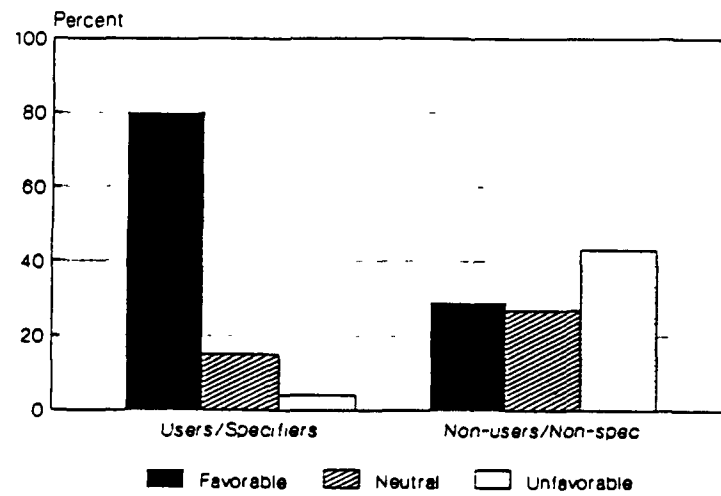
FAMILIARITY WITH PVC PIPE By Usage



Forty-three percent of non-users or non-specifiers have an unfavorable attitude toward using PVC pipe, while 80 percent of users or specifiers are favorably inclined.

(Q.3, pg. 24)

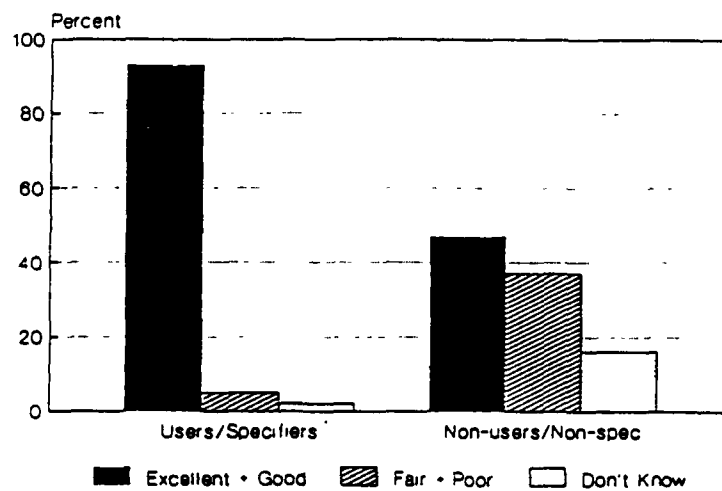
ATTITUDE TOWARDS USAGE By Usage



Less than half of non-users or non-specifiers (47%) rated PVC pipe's overall performance as Excellent or Good, compared to 93 percent of users or specifiers with this opinion.

(Q.14, pg. 54)

OVERALL PERFORMANCE By Usage



CTL029062

- Both users or specifiers and non-users or non-specifiers concurred in rating PVC pipe Excellent or Good on Weight and handling ability, and Fair or Poor on Ease of locating PVC pipe after it has been installed in the ground.

Where they differed was that non-users and non-specifiers were much less favorably inclined towards PVC pipe's Strength, as well as its Durability, its Tapping properties, its Resistance to leaching, its Resistance to permeation, and its Ease and economy of installation.

(Q.15, pg. 56)

EXCELLENT PLUS GOOD SCORES			
Characteristic	Users/ Specifiers	Non-users/ Specifiers	Difference
Strength	78%	27%	+51*
Durability	81%	45%	+36*
Tapping properties	64%	29%	+35*
Resistance to leaching	81%	49%	+32*
Resistance to permeation	77%	47%	+30*
Ease and economy of installation	95%	69%	+26*
Resistance to corrosion	99%	86%	+13*
Resistance to electrical, electrostatic and galvanic interaction	96%	84%	+12*

*Difference statistically significant

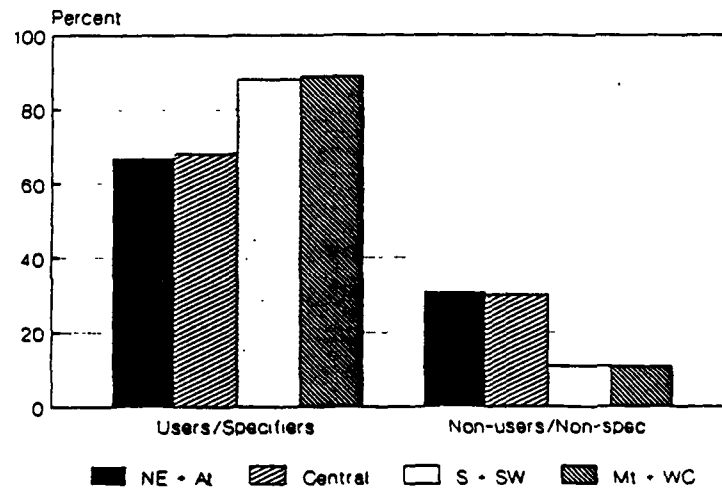
(Q.15, pg. 56)

CTL029063

- Non-users and non-specifiers are much more likely to be located in the New England and Atlantic Region (31%) and the Central Region (30%) than in the rest of the country (11%).

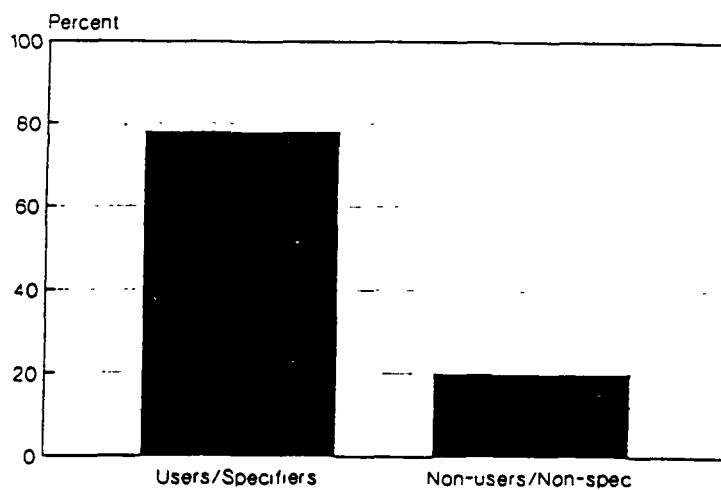
(Q.2, pg. 21)

REGIONAL LOCATION By Usage



- Overall, 20 percent of those surveyed were non-users or non-specifiers of PVC pipe. (Q.2, pg. 21) The principal reason given for not using or specifying was the preference for other materials, mainly ductile iron (37%). Another 14 percent reported problems with PVC on strength or breaking or cracking. (Q.2a, pg. 23)

USAGE AND SPECIFICATION



CTL029065

5. Concern about the effect of PVC pipe on water qualities does not seem to be a major problem.

Of the small group (29 people) who have an unfavorable attitude towards using PVC pipe, only 3 or 10 percent said that the reasons concerned water quality.

(Q.4a, pg. 28)

Of those who say they do not use or specify PVC pipe (51 people), just 2 or 4 percent cited concerns about leaching.

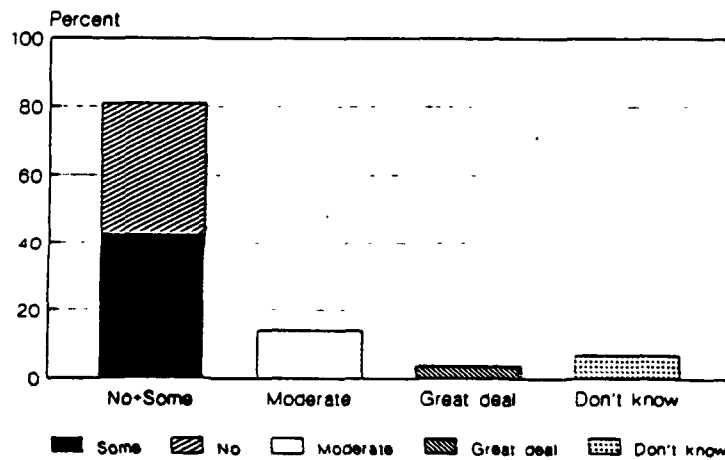
(Q.2a, pg. 23)

Only 4 percent of all those surveyed agreed they have a great deal of concern about the effect of PVC on water quality and are less inclined to use or specify it.

Most people (81%) said they have either no concern or just some concern about the effect of PVC pipe on water quality, while another 14 percent have a moderate concern, but still use or specify PVC pipe.

(Q.16, pg. 88)

CONCERN FOR EFFECT On Water Quality By PVC Pipe

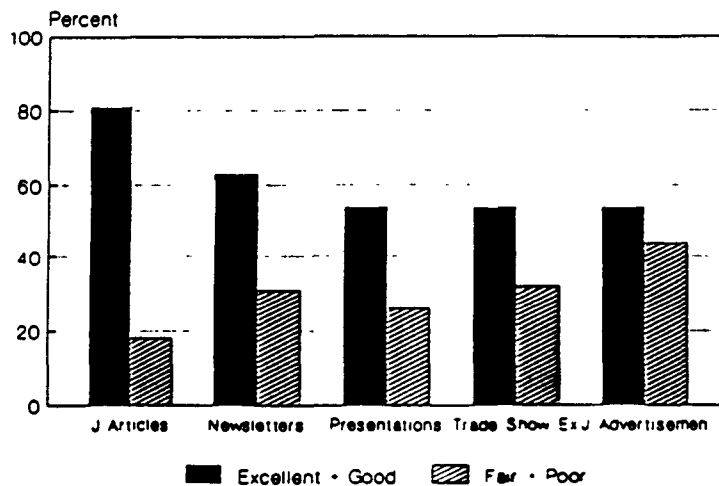


6. The Vinyl Institute is using the best regarded information channels in its program.

- Trade journal articles and Industry newsletters were the top rated sources in terms of receiving useful information on water pipe, well ahead of Trade show exhibits, Presentations at industry meetings and Trade journal advertising - Trade journal articles, 81% Excellent or Good. Industry newsletters, 63% Excellent or Good.

(Q.17, pg. 90)

INFORMATION SOURCES On PVC Pipe



CTL029068

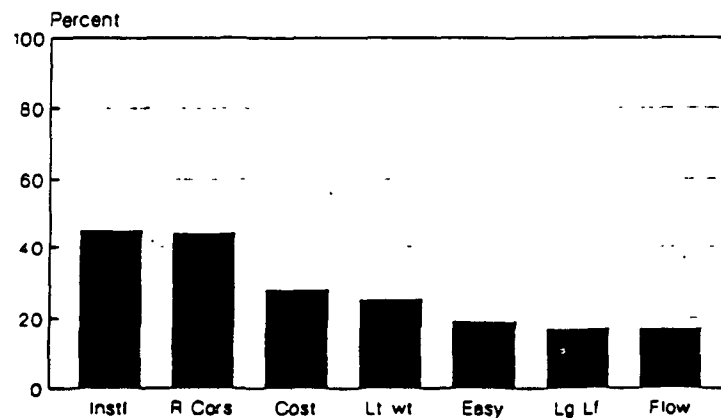
7. Knowledge of PVC's properties is good, but there is still work to be done to improve matters.

- The highest ranked characteristics as PVC's best properties for water distribution - Ease, economy and speed of installation and corrosion resistance - were named by only 45 percent and 44 percent respectively on an unaided basis.

(Q.4, pg. 26)

PVC PIPE BEST PROPERTIES

By those favorable to use



For water distribution applications

CTL029069

Of ten characteristics on which PVC pipe was rated for performance, there were four where better than 90 percent rated vinyl as Excellent or Good.

(Q.15, pg. 56)

For three of the characteristics over one in four rated PVC pipe as Fair or Poor.

RATINGS OF CHARACTERISTICS			
Characteristics	Excellent Plus Good	Fair Plus Poor	Don't Know
Weight and handling ability	98%	0%	1%
Resistance to corrosion	96%	2%	1%
Resistance to electrical, electrostatic and galvanic interaction	94%	2%	3%
Ease and economy of installation	90%	7%	3%
Resistance to leaching	74%	8%	16%
Durability	73%	18%	7%
Resistance to permeation	71%	13%	13%
Strength	67%	28%	4%
Tapping properties	57%	28%	13%
Ease of locating PVC pipe after it has been installed in the ground	14%	74%	10%

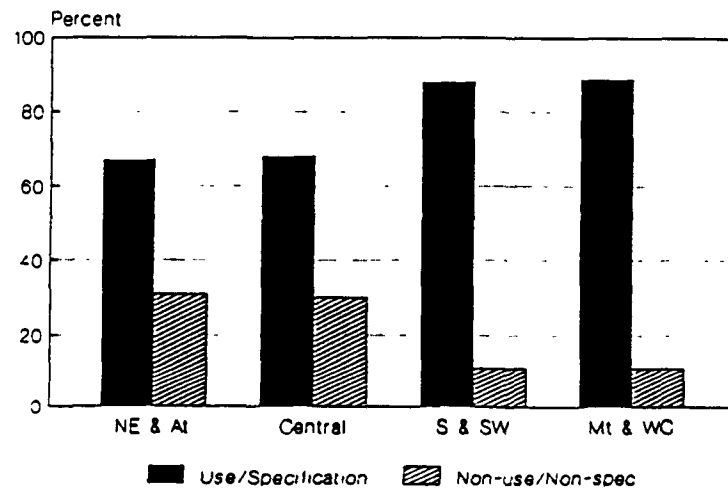
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- The New England and Atlantic Region and the Central Region are less supportive of PVC pipe than other areas.

Familiarity with PVC pipe is high across all geographic regions. However, use or specification is lower in the New England and Atlantic Region (67%) and the Central Region (68%), than it is in the South and Southwest Region (88%) and Mountain and West Coast Region (89%).

(Q.2, pg. 21)

USE/SPECIFICATION By Region

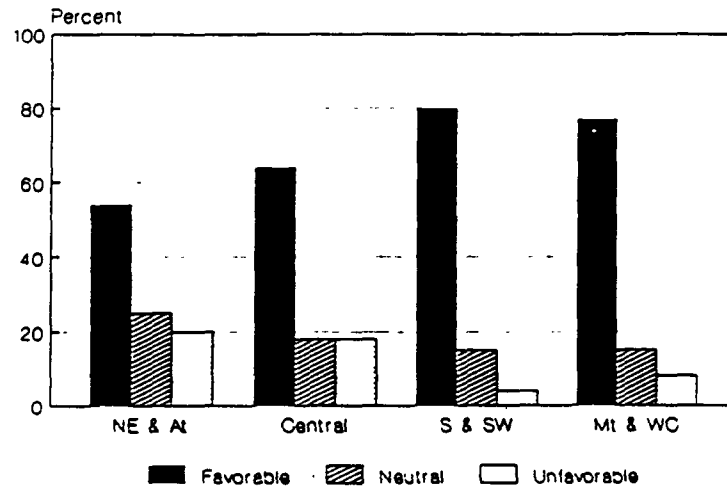


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This tracks with lower favorable attitudes toward the use of PVC pipe in both of these areas (54% and 64% respectively), compared to the South and Southwest Region (80%) and the Mountain and West Coast Region (77%).

(Q.3, pg. 24)

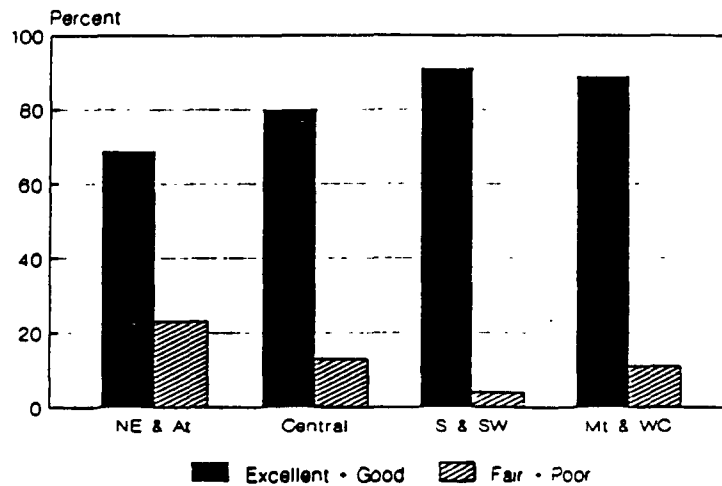
ATTITUDE TOWARD USE By Region



Finally, only 69 percent in the New England and Atlantic Region rated the overall performance of PVC pipe as Excellent or Good. Eighty percent did so in the Central Region. This compared to 91 percent and 89 percent in the South and Southwest Region and the Mountain and West Coast Region respectively.

(Q.14, pg. 54)

OVERALL PERFORMANCE By Region



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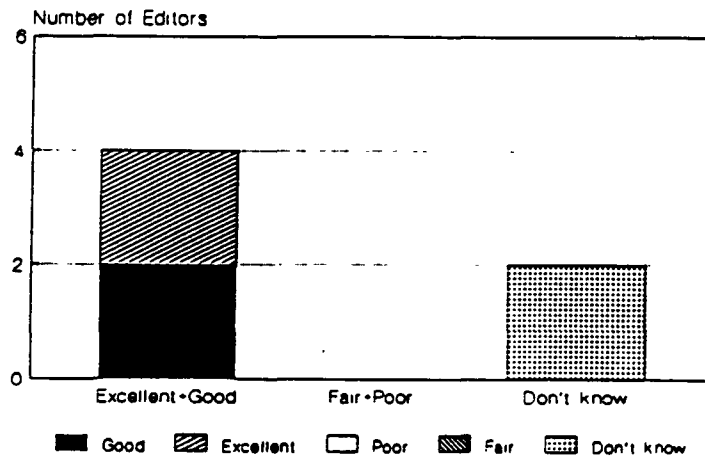
- The survey of six trade editors revealed that all were aware of The Vinyl Institute and all recalled receiving information from it.

(Q.8, pg. 112, and Q.9, pg. 113)

- Four of six editors had a high regard for PVC pipe's overall performance, while two did not feel they could make a judgement.

(Q.13, pg. 117)

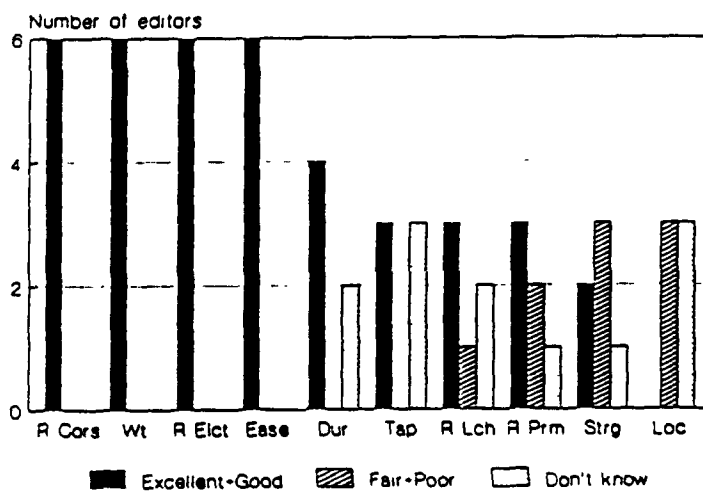
OVERALL PERFORMANCE Among six trade journal editors



- They rated PVC pipe performance on various properties similarly as the industry representatives.

(Q.14, pg. 118)

PERFORMANCE RATINGS Among six trade journal editors

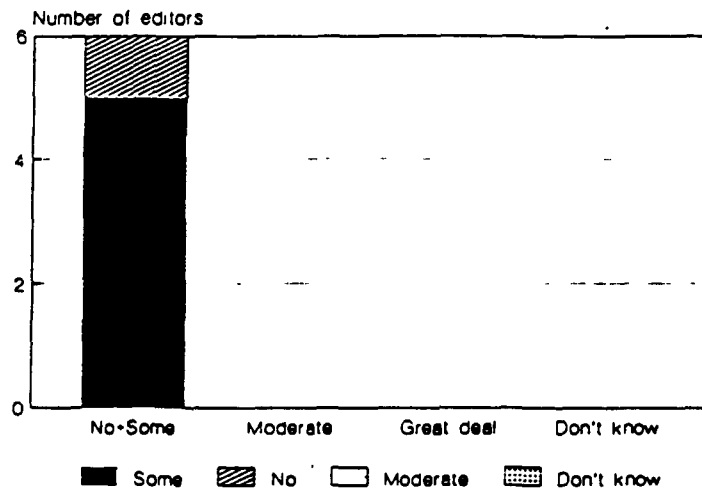


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The editors did not express a great deal of concern about the effect of PVC pipe on water quality and none of them said they were less inclined to support the specification of PVC pipe.

(Q.15, pg. 119)

WATER QUALITY CONCERN Among six trade journal editors

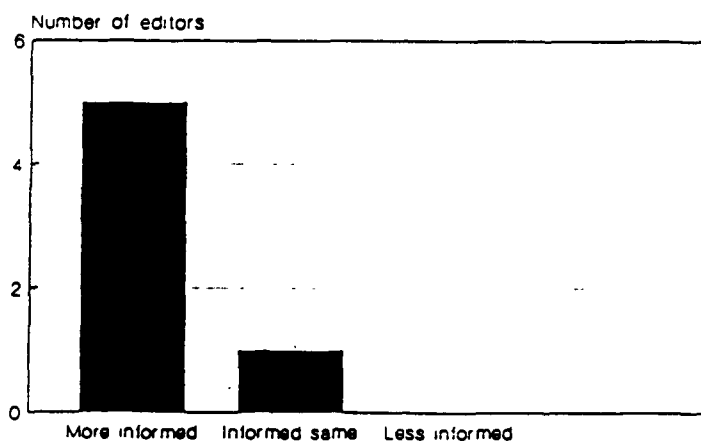


CTL029076

Five of the six editors felt better informed about the properties of PVC pipe today than three years ago and three cited The Vinyl Institute as the main source of the information that had made them better informed.

(Q.6, pg. 110 and Q.7, pg. 111)

CHANGE IN BEING INFORMED Among six trade journal editors



CTL029077