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A STUDY OF IMPLEMENTATION OF THE HEALTH PROVISIONS OF THE FACTORIES ACT, 1948

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Abstract

Health is the greatest gift to a human being. Workers need sound health for the efficient working process. Workers can perform their duties effectively, properly and smoothly only when they are physically and mentally fit. The Factories Act, 1948 provides for various health measures in chapter III. This survey study examines the level of their implementation at plant level in iron foundries and engineering factories in Agra division of U.P. state of India. This survey study is based up on the empirical data collected from 100 factories- 57 iron foundries and 43 engineering industries, selected through purposive sampling. 500 workers-05 workers from each factory were also interviewed. Observation Schedule, Interview Schedule and Interview Guide were used to collect the data. This study finds empirically the level of compliance of the health provisions of the Factories Act, 1948 such as cleanliness, disposal of wastes and effluents, ventilation and temperature, dust and fumes, overcrowding, lighting, latrines, urinals and spittoons.

KeyWords: Workers; Health; Cleanliness; Wastes and Effluents; Ventilation and Temperature; Dust and Fume; Overcrowding.

INTRODUCTION

Workers need sound health for the efficient working process. Unless the workers are physically and mentally healthy they can not perform their duties effectively, properly and smoothly. It is, therefore, necessary to adopt measures to maintain their health. The environment of the factory wherein they are engaged in any manufacturing process must be cleaned, decorated and charming with proper arrangement of lighting, ventilation and temperature, free from infection, insanitation,

dust and fume, artificial humidification, overcrowding and other conditions injurious to health of the workers. The premises of the factory are kept clean, free from wastes and effluvia arising from any drain, dirt and refuse, etc. They are washed, painted and decorated properly, maintained keeping in view cleanliness, disposal of dust and fume, proper arrangement for lighting, drinking water, latrines, urinals, spittoons and other proper arrangement for better working conditions in factories so that workers engaged in manufacturing process may be in high spirit to perform their duties so as to produce or manufacture more than what is possible in a dull and unhealthy environment in the factories.

The Factories Act 1948 under its chapter III

contains various provisions regarding measures to be adopted by occupier of the factory to maintain proper environment of work in factory. This Survey Research Study appraises the level of implementation of various provisions relating to health measures in iron foundries and engineering industries of Agra division of U.P. state of India.

Sharma (1979) emphasised that it is the responsibility of the factory management to look after the implementation of all the provisions of the Factories Act, 1948.

Pal (1988) found that most of the operations in lock making-e.g. buffing sheet metal work, painting, assembling of brass and iron locks were carried out manually; and children were also employed in many operations; workers were exposed to various hazards such as dust, molten metal, acid fumes; and illumination at solvent vapors, etc. was poor.

Raidas (1990) in his research found that simple benign pneumoconiosis (5.96%) was more prevalent among refractory workers as compared to true silicosis (1.3%). He advised providing alternate dust free jobs to the affected employees; subjecting the dust exposed employees regularly and periodically to screening tests including lung function tests yearly and chest x-ray once in three years; and provision of dust control measures and dust masks to special categories of identified employees.

Ranjithamony (1991) concluded that benefits of various socio-economic schemes have not reached the workers. Workers have not benefitted from the provisions of various labour welfare enactment. Workers were residing near stone quarries / crushers in overcrowded, low roof huts made from coconut and palm tree leaves and polluted environment. Medical, education, recreation, toilet and drinking water facilities are practically non-existent.

The Supreme Court (1995) in a case of the effect of asbestos exposure on the health of the workers the court has held that right to health and medical aid to protect the health and vigour of a worker while in service or after retirement is a fundamental right under Article 21 read with Articles 39(e), 41, 43, 48A and all related Articles and fundamental human rights to make the life of

the workman meaningful and purposeful with dignity of person.

METHODOLOGY

Research design of this survey study is exploratory in nature. Out of a universe of 387 iron foundries and engineering industrial units from Agra, Mathura, Firozabad and Mainpuri districts of Agra Division of Uttar Pradesh state of India, a sample size of 100 factories (57 iron foundries and 43 engineering industries) was selected through purposive sampling. Besides, 500 workers-05 workers from each factory were also selected through random sampling technique. Observation Schedule, Interview Schedule and Interview Guide were used to collect the data. The respondents for this study were owners, occupiers or managing agents, workers, trade union leaders, lawyers and government officials of the labour department.

ANALYSIS AND INTERPRETATION

Table 1: State Of Cleanliness In Factories

s. N.	Particulars of Premises	Foundries				Engg				Total		G. Total
		Clean	%	Unclean	%	Clean	%	Unclean	%	Clean	Unclean	
1	Floors and benches	29 (50.9)	40.3	28 (49.1)	100.0	43 (10.0)	59.7	00 (00.0)	00.0	72	28	100
2	Inside walls and partitions	07 (13.3)	46.7	50 (87.7)	58.8	08 (18.6)	53.3	35 (81.4)	41.2	15	85	100
3	Walls, sides and tops of passages	05 (8.8)	41.7	52 (91.2)	59.1	07 (16.3)	58.3	36 (83.7)	40.9	12	88	100
4	Ceilings and tops of rooms	06 (10.5)	42.9	51 (89.5)	59.3	08 (18.6)	57.9	35 (81.4)	40.7	14	86	100
5	Doors and window frames	04 (7.0)	44.4	53 (93.0)	58.2	05 (11.6)	55.6	38 (88.4)	41.8	09	91	100
6	Wooden and metallic frames	03 (5.3)	37.5	54 (94.7)	58.7	05 (11.6)	62.5	38 (88.4)	41.3	08	92	100
7	Shutters etc	03 (5.3)	37.5	54 (94.7)	58.7	05 (11.6)	62.5	38 (88.4)	41.3	08	92	100

Data gathered through observation as contained in table 1 demonstrates that provisions relating to cleanliness of floors and benches in the factories were fully complied with in 72% of the total industries of which 59.7% were engineering units whereas 40.3% were foundries. 28% industrial establishments did not have their floors and benches clean. Thus, they violated Section 11 (a) of the Factories Act. 1948. Cleanliness in other parts of factories such as inside walls and partitions; walls, sides and tops of passages; and ceilings and tops of rooms was found unsatisfactory in most of the factories covered under this study.

The data in the table also shows that Section 11 of the Chapter III of the Act was grossly violated, as cleanliness of doors, window frames, wooden and metallic frames, shutters etc. was highly unsatisfactory as provisions relating to these were complied with only in 8 to 9% of the factories. Overall, the state of cleanliness was found better in engineering industries than in iron foundries because of different requirements of the manufacturing processes. Various methods to ensure cleanliness included sweeping, washing, brushing, dusting, cleaning, draining, white-washing, colour-washing, varnishing and painting.

Table 2: Means And Place For Disposal Of Industrial Wastes And Effluents.

MEANS OF DISCHARGE										
S. No.	Place for Discharge	Closed Pipe or Channel				Open Pipe or Channel				Total
		Foundries	%	Engg. Ind.	%	Foundries	%	Engg. Ind.	%	
1.	Stream	02	7.4	04	14.8	13	48.2	08	29.6	27
2.	Ditch/Well	02	25.0	00	00.0	04	50.0	02	25.0	08
3.	Sewer	04	8.3	06	12.5	18	37.5	20	41.7	48
4.	Land	03	17.6	02	11.8	07	41.2	05	29.4	17
	Total	11		12		42		35		100

Data in the table no.2 describes the means and places for disposal of industrial wastes and effluents in accordance with Section 12 of the Factories Act, 1948. It shows that 23% of industries have made arrangements of closed pipes/channels to discharge their wastes and effluents and a majority 78% of the factories discharge their wastes and effluents through open channels.

Most (48%) of the factories discharge their wastes into sewer, of which 54.2% factories are engineering industries and the rest are foundries. 27% industrial units discharge their wastes and effluents directly into streams, of which 55.2% were foundries and the rest were engineering units. Open land was utilised by 17% of the establishments for discharge of their wastes and effluents. The minimum number of 8% of factories discharged their wastes and effluents into wells or ditches, of which 75% of the factories used open channels for discharge.

It is noticed from the data that arrangements for disposal of wastes and effluents were not made in accordance with the statutory provisions in most of the factories surveyed. However, compliance of statutory provisions is comparatively slightly better in engineering

industries than in iron foundries. Nonetheless table indicates towards gross violation of Section 12 of the Factories Act, 1948, and the relevant provisions of the Water (Prevention and Control of Pollution) Act, 1974, and rules made thereunder.

Table 3 indicates that ventilators for fresh air were provided in 74% of the industrial units surveyed, majority (68.8%) of which were iron foundries and the remaining 39.2% were engineering industries. Measures like forced draught fans had been provided in 30% industries which included 73.3% engineering industries and 26.7% iron foundries. A little number (18%) of the industries only took measures to provide for suitable walls and roofs so as to resist excessive temperature in the workrooms.

Table 3: Measures For Ventilation And Temperature In Workrooms.

S.N.	Measures	Foundries	%	Engg. Ind.	%	Total
1.	Ventilates for fresh air	45	68.8	29	39.2	74
2.	Forced draught fans	08	26.7	22	73.3	30
3.	Fans, Coolers or air conditioners	04	33.3	08	66.7	12
4.	Suitable walls and roofs	07	38.9	11	61.1	18
5.	Insulation of hot parts	03	25.0	09	75.0	12
6.	Temperature measuring instruments	01	14.3	06	85.7	07
7.	Maintenance of temperature records	00	00.0	06	100.0	06

Only 12% of the factories made arrangements of fans, coolers or air conditioners and insulation of hot parts, of which engineering industries constituted the majority. A minimum of 6% of the factories, all of which were engineering industries maintained records of temperature while 7% of the factories provided for temperature measuring instruments in which most (85.7%) of the units were engineering industries.

This table clearly indicates that enforcement of provisions of Section 13 of the Factories Act, 1948 which relates to measures for ventilation and temperature in workrooms was fairly better in engineering industries than in iron foundries.

Table 4: Precautionary Measures For Treatment Of Dust, Fume and Other Impurities.

S. No.	Precautionary Measures	Foundries	%	Engg. Ind.	%	Total
1.	Installation of exhaust appliances	08	26.7	22	73.3	30
2.	Enclosure of points of origin of dust, fume, and other impurities	02	25.0	06	75.0	08
3.	Exhaust of stationary engines conducted into open air	44	57.9	32	42.1	76
4.	Combustion engines moved outside while being operational	02	25.0	06	75.0	08

Data contained in table 4 depicts precautionary measures taken in accordance with the Section 14 of the Factories Act, 1948 for treatment of dust, fume and other impurities generated in the factories. 76% of the industries conducted the exhaust of stationary engines into open air in which 57.9% were the foundries and remaining were engineering industries. Other exhaust appliances were installed in 30% of the factories of which engineering industries constituted majority (i.e. 73.3%) and iron foundries formed 26.7% only. A very dismal number of 8% of the factories enclosed points of origin of dust, fume, and other impurities and an equal number moved their combustion engines outside while being operational. It may be inferred that provisions with regard to precautionary measures for treatment of dust, fume and other impurities are relatively better followed in engineering industries. However, the level of implementation of this provision was not satisfactory.

Table 5: Compliance of Provision Relating to Overcrowding.

S. No.	Arrangements	Foundries	%	Engg. Ind.	%	Total
1.	Availability of required space	47	54.7	39	45.3	86
2.	Notice of maximum capacity of a workroom displayed	01	33.3	02	66.7	03

The space as required under Section 16 of the Factories Act, 1948 to prevent overcrowding in workrooms was available in 86% of the factories of which 54.7% of factories were iron foundries and 45.3% were engineering industries. Notices of the maximum capacity of a workroom were found to be displayed in just 3% of the factories consisting of 33.3% foundries and 66.7% engineering units. Compliance of Section 16 of the Act to the extent of availability of required space was found highly satisfactory whereas it was highly unsatisfactory with regard to display of notices of maximum capacity of workrooms in the factories.

Table 6: Arrangements For Lighting.

S.No.	Measures	Foundries	%	Engg. Ind.	%	Total
1.	Sufficient natural lighting	41	64.1	23	35.9	64
2.	Reasonably practicable artificial lighting	48	63.2	28	36.8	76
3.	Prevention of glare and reflection	05	31.3	11	68.7	16
4.	Prevention of formation of shadows	06	31.6	13	68.4	19
5.	Glazed windows and skylights	00	00.0	09	100.0	09
6.	Lighting is free from obstruction	09	39.1	14	60.9	23

Table 6 shows data on arrangements made for lighting in accordance with the requirements of section 17 of the Factories Act, 1948. Reasonable and practicable artificial lighting arrangements were made in 76% of the factories, of which 63.2% were foundries and 36.8% were engineering industries. Sufficient natural lighting arrangements were made in 64% of the total industries surveyed which comprised of 64.1 % of foundries and 35.9% engineering industries. Measures for prevention of shadows in the workrooms were taken in 19% of the total industries, of which engineering industries and foundries were 68.4% and 31.6% respectively. Light was found free from obstruction in 23% of the factories, in which 60.9% were engineering industries and 39.1% were foundries. Glazed windows and skylights were provided in a minimum of 09% of the factories only. Arrangements for prevention of glare and reflection were made in 16% factories only wherein 68.7% engineering industries were included. The table 6 also indicates that level of implementation of Section 17 relating to lighting was more ensured in engineering industries in all respects except availability of sufficient lighting.

Table 7 contains data on compliance of provisions relating of drinking water as laid down in Section 18 of the Factories Act, 1948.

Table 7: Arrangements Made For Drinking water.

S.No.	Arrangements	Foundries	%	Engg. Ind.	%	Total
1.	Availability of as many gallons of water as there are workers	09	39.1	14	60.9	23
2.	Taps of public water-supply system	24	42.1	33	57.9	57
3.	Hand pumps and/or jet pumps etc.	33	44.6	41	55.4	74.4
4.	Hand pumps and/or jet pumps etc. approved	01	20.0	04	80.0	05
5.	Water-points legibly marked	03	25.0	09	75.0	12
6.	Water-points situated beyond six meters of washing place, urinal, latrine, spittoon and open drain	17	43.6	22	56.4	39.7
7.	Cold water supplied during hot season	27	58.7	19	41.3	46

Arrangements like hand pumps and/or jet pumps etc. have been made in a fairly good number (74%) of the total factories, which included 55.4% engineering industries and 44.6% foundries. Nevertheless, hand pumps and jet

pumps approved by the prescribed authorities were found only in 5% of the factories, of which 80% were engineering industries. Taps of public water-supply system were arranged in 57% of the factories in which 57.9% were engineering industries. Cold water was supplied during hot season in 46% of the factories which comprised of 58.7% foundries. In 39% of the factories water-points were situated beyond six meters of washing place, urinal, latrine, spittoon and open drains, of which 56.7% were engineering industries and 43.6% were foundries. Water-points were found legibly marked in only 12% of the factories of which 75% were engineering industries. Arrangements made for drinking water were found to be comparatively better in engineering industries than in iron foundries. Data in the table 8 demonstrate the arrangements made for latrines and urinals in the factories to comply with Section 19 of the Factories Act, 1948. Sufficient number of latrines and urinals were provided in 89% of the industries, of which 53.9% were foundries and 46.1% were engineering industries and all of the latrines and urinals were connected with sewage system. In 70% of the industries, latrines and urinals were conveniently situated and easily accessible.

These latrines and urinals were adequately lighted and ventilated in an equal number (i.e. 70%) of the factories covered in the sample. 65% of the industries employed sweepers to maintain the latrines and urinals in a clean and sanitary condition.

Privacy of latrines and urinals was secured in 57 industries, of which 68.4% were engineering industries and the rest 31.6% were iron foundries. Glazed tiles and smooth surface of latrines and urinals were found in 41% of the factories in which 58.5% were engineering industries. Proper doors and fastenings were provided in latrines and urinals of just 38% of the factories, of which 55.3% were engineering industries and 44.7% were foundries. Latrine and urinal accommodations were white-washed and/or colour-washed regularly in only 23% of the factories. Separate accommodations of latrines and urinals for men and women were provided in 9% of the factories only and signboards of male and female were found in 7% of the factories, majority (i.e. 71.4) of

which were engineering industries. Availability of convenient, accessible and sufficient number of latrines and urinals was found in higher number of foundries than engineering industries.

Table 8: Arrangements For Latrines And Urinals

S.No.	Arrangements	Foundries	%	Engg. Ind.	%	Total
1.	Sufficient no. of latrines and urinals	48	53.9	41	46.1	89
2.	Convenient and accessible	31	44.3	39	55.7	70
3.	Connected with sewage system	48	53.9	41	46.1	89
4.	Privacy of latrines and urinals	18	31.6	39	68.4	57
5.	Separate for men and women	03	33.3	06	66.7	09
6.	Signboards of male and female	02	28.6	05	71.4	07
7.	Proper doors and fastenings	17	44.7	21	55.3	38
8.	Adequately lighted and ventilated	29	41.4	41	58.6	70
9.	Maintained in a clean and sanitary condition	27	41.5	38	58.5	65
10.	White-washed and/or colour-washed regularly	08	34.8	15	65.2	23
11.	Glazed tiles and smooth surface	17	41.5	24	58.5	41
12.	Sweepers employed	27	41.5	38	58.5	65

However, other arrangements for latrines and urinals were better made in engineering industries. Provision of latrine and urinal accommodations was better than its maintenance. The level of implementation of Section 19 of the Factories Act, 1948 was satisfactory.

Data in table no. 9 shows arrangements made for spittoons to secure compliance of various requirements of Section 20 of the Factories Act, 1948. Sufficient number of spittoons were provided at convenient places in 41% of the factories surveyed, a majority (65.9%) of them were engineering industries and 34.1% were foundries. Galvanised iron containers were provided for spittoons in 37% of the industries only, of which 67.6% were engineering industries and the rest were foundries.

No person spat except in spittoons in 22% of the factories, of which 81.8% were engineering industries. Notice of penalty was displayed in 19% of the factories, of which foundries were only 21.1%. The state of hygiene and cleanliness of factories was highly unsatisfactory, being comparatively better in engineering industries.

Table 9: Arrangements For Spittoons.

S. No.	Arrangements	Foundries	%	Engg. Ind.	%	Total
1.	Galvanised iron container for spittoons	12	32.4	25	67.6	37
2.	Sufficient no. of spittoons	14	34.1	27	65.9	41
3.	Provided at convenient place	14	34.1	27	65.9	41
4.	Filled with dry-clean sand	02	28.6	05	71.4	07
5.	Layer of bleaching powder and lime	00	00.0	03	100.0	03
6.	Cleaned and disinfected daily	00	00.0	03	100.0	03
7.	Notice of penalty displayed	04	21.1	15	78.9	19
8.	No person spits except in spittoons	04	18.2	18	81.8	22
9.	Fine ever imposed for contravention	02	33.3	04	66.7	06

Table 10 Reasons for Non-Compliance of Health Provisions

S.No.	Reasons	Foundries	%	Engg. Ind.	%	Total
1.	Non-availability of space and infrastructure	13	59.1	09	40.9	22
2.	Financial scarcity	08	42.1	11	57.9	19
3.	No need for such arrangements	19	57.6	14	42.4	33
4.	Not required under the Act.	03	75.0	01	25.0	04
5.	Gratification to authorities	17	63.0	10	37.0	27
6.	Waste of time and money	06	75.0	02	25.0	08
7.	Authorities don't visit	18	58.1	13	51.9	31

Among the reasons for non-compliance of health provisions as shown in table 10, 33% of the respondents said that there was no need for such arrangements, of whom 57.6% were from foundries and 42.4% were from engineering industries. 31% of the respondents told that authorities did not visit the factories to secure compliance of health provisions. Moreover, 27% of the respondents admitted that they gave regular gratification (bribe) to the authorities in order to avoid prosecution for violation of labour laws. Financial scarcity was the reason for non-compliance of different provisions in 19% of the factories - 57.9% engineering industries and 42.1% iron foundries, 8% of the industries did not comply with health provisions because they thought that it was mere an unnecessary waste of money, time and other resources. 4% of the industries were either exempted or not required under the Factories Act. 1948 and rules made thereunder to comply with some of the health provisions.

CONCLUSIONS

- 1.Cleanliness of floors and benches of the workrooms in the factories was found satisfactory in 72% factories. Cleanliness in other parts of the factories was unsatisfactory. The state of cleanliness was better in engineering industries than in iron foundries.
- 2.In majority of the industries, the arrangements for disposal of industrial wastes and effluents were not made in accordance with the provisions of the Factories Act, 1948 and the Water (Prevention and Control of Pollution) Act, 1974.
- 3.Ventilates for fresh air were provided in 74% factories while temperature records and instruments were maintained only in less than 10% of the factories. Measures for ventilation and temperature were fairly better in engineering industries. However, provision of ventilates for fresh air was better provided and maintained in iron foundries.

- 4.Exhaust of stationary engines was conducted into open air in 76% industrial establishments. Other exhaust appliances were installed in 30% of the factories covered under the study. Precautionary measures for treatment of dust, fume and other impurities are relatively better provided and maintained in engineering industries. Nevertheless, the level of implementation of the provisions relating to treatment of dust, fume and other impurities is far from satisfactory.
- 5.Compliance of the provision relating to overcrowding was highly satisfactory as far as the availability of the required space in the workrooms was concerned. But it was highly unsatisfactory as the notice of maximum capacity of workroom(s) was displayed in a minuscule number (3%) of the factories.
- 6.Sufficient and reasonable lighting arrangements were made in 76% of the factories whereas arrangements for prevention of glare and reflection, formation of shadows, obstructions to light and provision of glazed windows and skylight were highly unsatisfactory. Except for availability of natural and artificial lighting, implementation of the provision relating to arrangements for lighting was better ensured in higher number of engineering industries.
- 7.Among the arrangements made for drinking water, hand pumps and/ or jet pumps were installed in 74% factories while approved taps of public water-supply system were found in only 05% of the factories. Cool water was supplied to the workers during summers season in 46% of the factories. Arrangements for drinking water were comparatively better in engineering industries.
- 8.Accommodations for latrines and urinals were provided in most (89%) of the industries. Other arrangements for latrines and urinals were found satisfactory in most of the iron foundries and engineering units. Availability of convenient, accessible and sufficient number of latrines and urinals were found in higher number of engineering units. However, other arrangements for latrines and urinals were better made in engineering industries. It was found that provision of latrine and urinal accommodations was better than their maintenance.
- 9.Arrangements for sufficient number of

spittoons were found satisfactory in 41 % of the factories. But hygiene and cleanliness of spittoons was highly unsatisfactory, being comparatively better in engineering industries.

10. Various reasons for non-compliance of health provisions were (i) no need for such arrangements (33%); (ii) authorities don't visit; (31%); (iii) gratification (bribe) to the authorities (27%); (iv) non-availability of space and infrastructure (22%); (v) financial scarcity (19%); (vi) waste of money and time (08%); and (vii) not- required under the Act (4%).

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