

Indoor Light Level Inspection

**ACS Textiles (Bangladesh) Ltd. &
ACS Towel Limited**

Inspection Ref. No: F/L 11318

Contact Us

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General Information			
Invoice Reference No: GB/2024/08/80		Inspection Date: 09.09.2024	
Inspection Reference No: F/L 11318		Inspection Duration: 11am-5pm	
Report Generation Date:	15.09.2024	Inspection Description: Indoor Light Level Inspection	
Report Submission Date:	22.09.2024	Inspection location: Inside Factory Building	
Inspection Standards: 2004/108/EEC			
<u>Company Name:</u> ACS Textiles (Bangladesh) Ltd. & ACS Towel Limited <i>Address: Tetlabo, Barpa, Rupgonj, Narayangonj.</i>		<u>Contact Person:</u> Md. Ruhul Alam Sharif <i>GM, Compliance</i>	
On Site Inspection Team			
Md. Shaharia Ahmed <i>Executive (Operation)</i> <i>B.Sc. in Environmental Science</i>		Tanzir Hosen <i>Chemist (Operation)</i> <i>B.Sc. in Chemistry</i>	
Report Prepared by		Quality Checked	
			
Md. Shaharia Ahmed <i>Executive (Operation)</i> <i>B.Sc. in Environmental Science</i>		Mosharof Hossain <i>Assistant Manager (Operation)</i> <i>M.Sc. & B.Sc. in Environmental Science</i>	
Report Approved by			
			
Engr. Syed Tasnem Mahmood <i>Chief Environmental Engineer & CEO</i> <i>B.Sc. & M.Sc. (Civil and Environmental Engineering)</i> <i>MIEB No.: M/35960</i>			

Introduction:

Well balanced illumination is essential for the establishment of a safe and productive work environment; optimizing illumination in the industrial workplace requires a number of considerations including type of equipment, environmental considerations, financial needs, goals, and type of work, etc. Generally, factors that affect the effectiveness of illumination are quantity and quality of light, amount of flicker, amount of glare, contrast and shadows. Each factor must be adjusted differently to optimize illumination in emergency, safety, operations, and security situations. Industrial Lighting Standards serve to address these concerns, in addition to the plethora of other concerns associated with the design, placement, installation, and energy requirements of illumination in industrial workplaces.

GREENBUD Testing & Inspection Services Private Limited has been hired to test the Indoor Light level of **ACS Textiles (Bangladesh) Ltd. & ACS Towel Limited**. GREENBUD has covered main production sections of the buildings and sheds for inspection of indoor light level and generated report according to the activity occupancy of the area.

In this report light level has been checked for some main production sections. Production sections are the main concern of total factory operation that is the reason why the report has been stated as an average of our collected Light level data.

Method of Analysis:

Measurement of light level was done using direct reading instruments. During the analysis, a standard work instruction stated in the TP-GB-03 was followed.

Relevant Illumination Level Standards:

Recommended Light Level (Step OEKO-TEX)	
Area/Task/Process	Illuminance Level (lux)
Spinning	
Opening bales	200
Carding, combing, flyer, singeing etc.	300
Spinning, winding, twisting etc.	500
Weaving/Knitting/Embroidery etc.	
Sizing	200
Doubling	300
Wrapping, weaving, knitting, stitching etc.	500
Controlling (fabrics, color etc.)	1000
Dyeing, printing, finishing etc.	
Sewing, washing, dyeing, finishing, ironing etc.	300
Printing, cleaning etc.	750
Controlling (fabrics, color etc.)	1000
Making up etc.	
Ironing, packing etc.	300
Cutting, sewing etc.	500
Controlling	1000

Recommended values of Illumination for Industrial Buildings and Process (BNBC'2020):

Clothing Factories	
Matching-up	450
Cutting, sewing	
Light	300
Medium	450
Dark	700
Inspection	
Light	450
Medium	1000
Dark	1500
Hand Tailoring	
Light	450
Medium	1000
Dark	1500
Pressing	300

Indoor Light Level Inspection Result: (ACS Textiles (Bangladesh) Ltd.)

Inspection Area					Inspection Status		
Sl. No	Building No	Floor/Level	Section	Condition	Bangladesh Labor Rules '2015 (lux)	Obtained Result	Height from Light source (cm)
1	Building No-01	Ground Floor	Embroidery Section	Working	Minimum Illumination Level = 350 Lux	960	CH
2		2nd Floor	prayer Room	Working		402	CH
3	Building no-02	Ground Floor	Sizing & Weaving	Working		417	CH
4		1st Floor	Cutting Section	Working		690	150
5			Feeding Section	Working		921	150
6			Stitching Section	Working		772	150
7			Fabrics Inspection	Working		1722	150
8			Fabrics Folding	Working		603	CH
9			Packing Section	Working		672	CH
10			Metal Free Zone	Working		478	CH
11	Building No-03	Ground Floor	Medical Center	Working		425	CH
12		1st Floor	Child Care	Working		483	CH
13			Fire Control Room	Working		526	CH
14	Building No-04	Ground Floor	Warping Section-01	Working		522	CH
15			Warping Section-02	Working		471	CH
16			Twisting & Doubling	Working		477	CH
17		1st Floor	Finishing Folding Section	Working		562	120
18	Building-05	Ground Floor	Sub-Station	Working		573	CH
19		1st Floor	Office Room	Working		482	CH
20			Technical Room	Working		447	CH
21	Building-06	Ground Floor	Bleaching	Working		578	180
22			Dyeing	Working		560	180
23			Mercerizing	Working		397	180
24			Dyeing Finishing	Working		472	180
25			Printing Section	Working		622	180
26			ETP	Working		838	DL
27	Building-07	Ground Floor	Work-Shop	Working		938	DL
28			Officer's Dining	Working		526	CH
29		2nd Floor	Worker's Canteen	Working		626	CH
30	Building-10	Ground Floor	Washing Area	Working		387	CH
31			Dryer Machine	Working		864	180
32	Building-11	Ground Floor	Quilting Machine	Working		509	CH
33		2nd Floor	Mending	Working		460	120
34	Building-12	Ground Floor	Weaving Section	Working		401	CH
35			Sizing Section	Working		475	CH
36			Warping Section-02	Working		532	CH
37			Stenter Machine	Working		628	CH
38			Rasing Section	Working		471	CH
39	Building-12	1st Floor	Quilting Section	Working		977	150
40			Cutting Section	Working		950	150
41			Feeding Section	Working		670	150
42			Stitching Section	Working		690	150
43			Fabrics Inspection	Working		1572	120
44			Fabrics Folding Section	Working		737	150
45			Packing Section	Working		601	150
46			Metal Free Zone	Working		617	CH

Inspection Area					Inspection Status		
Sl. No	Building No	Floor/Level	Section	Condition	Bangladesh Labor Rules'2015 (lux)	Obtained Result	Height from Light source (cm)
47	Building-13	Ground Floor	Office Area	Working	Minimum Illumination Level = 350 Lux	401	CH
48	Building-14	Ground Floor	Digital Printing	Working		791	CH
49		1st Floor	Tufting	Working		552	CH
50		2nd Floor	Tufting	Working		627	CH
51	Building-15	Ground Floor	Admin & Compliance	Working		627	CH
52			Accounts & Finance	Working		837	CH
53			Commercial	Working		683	CH
54		1st Floor	Show Room	Working		663	CH
55			Display Center	Working		578	CH
56			Marketing	Working		528	CH
57			Commercial	Working		669	CH
58		2nd Floor	Sample Room	Working		682	CH
59			IT Room	Working		524	CH

****Abbreviations and Acronyms:** DL= Day Light; lux= light intensity measuring unit, CH= Ceiling Height.

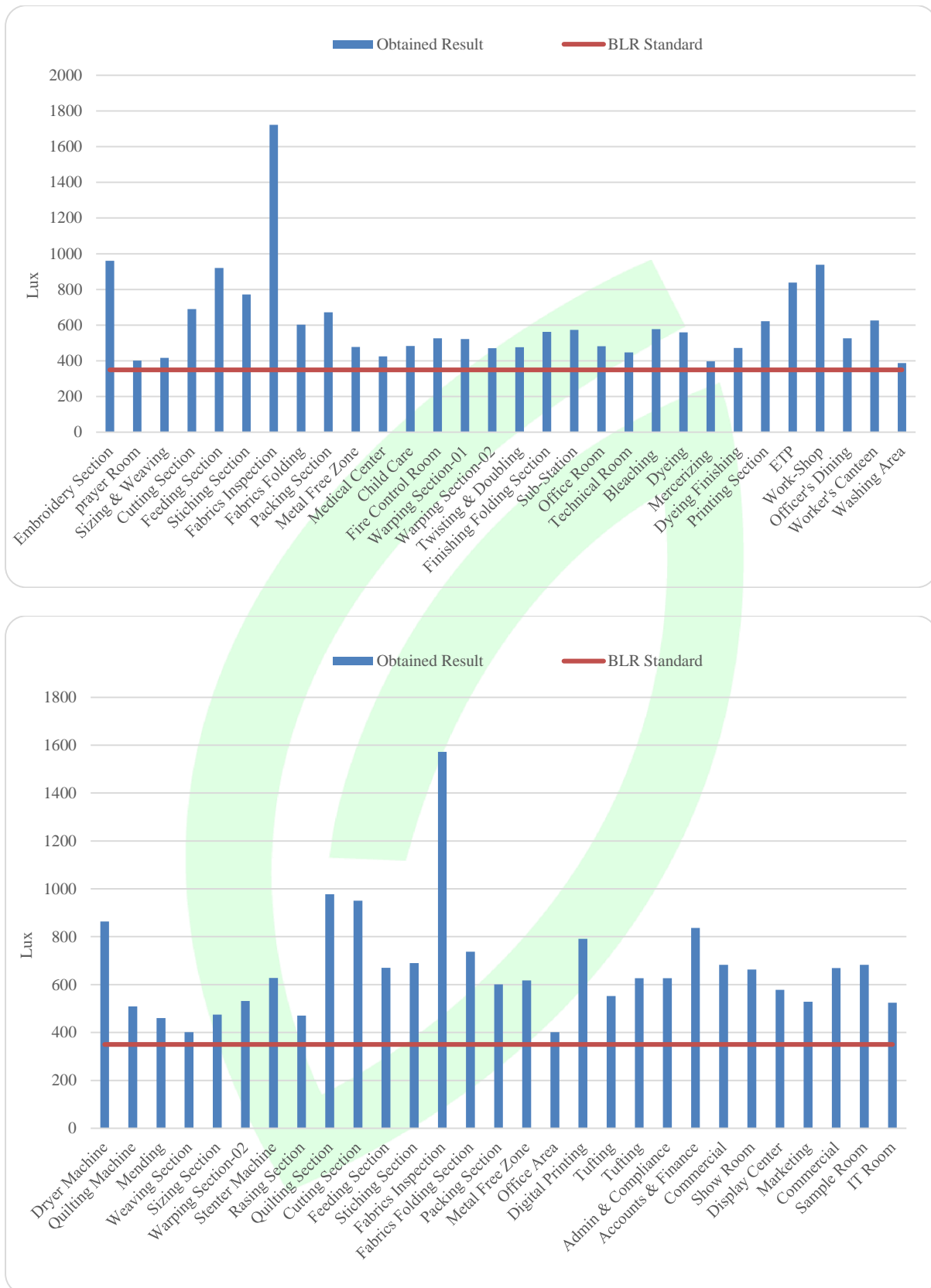


Figure: Indoor Light Level Monitoring Chart

Indoor Light Level Inspection Result: (ACS Towel Limited)

Inspection Area					Inspection Status		
Sl. No	Building No	Floor/Level	Section	Condition	Bangladesh Labor Rules'2015 (lux)	Obtained Result	Height from Light source
1	Building-1	Ground Floor	Warping Section	Working	Minimum Illumination Level = 350 Lux	473	150
2			Sizing Section	Working		640	150
3			Weaving Section	Working		560	180
4			Dyeing & Finishing	Working		367	CH
5			Lab Room	Working		563	CH
6			Flatbed Printing Section	Working		850	CH
7		1st Floor	Cutting Section	Working		1050	150
8			Stitching Section	Working		790	150
9			Inspection Room	Working		1392	150
10			Folding Section	Working		864	150
11			Packing Section	Working		678	150
12	Building-2	Ground Floor	Medical Center	Working		456	CH
13		1st Floor	Child Care	Working		563	CH
14	Building-3	2nd Floor	Work Shop	Working		657	CH
15			Officer's Dining	Working		465	CH
16			Worker's Dining	Working		678	CH
17	Building-4		Technical Director Office	Working		572	CH
18	Building-5	Ground Floor	Quilting Machine Room	Working		401	CH
19		2nd Floor	Mending Area	Working		894	150
20	Building-7	Ground Floor	Security Post	Working		783	CH

****Abbreviations and Acronyms:** DL= Day Light; lux= light intensity measuring unit, CH= Ceiling Height.

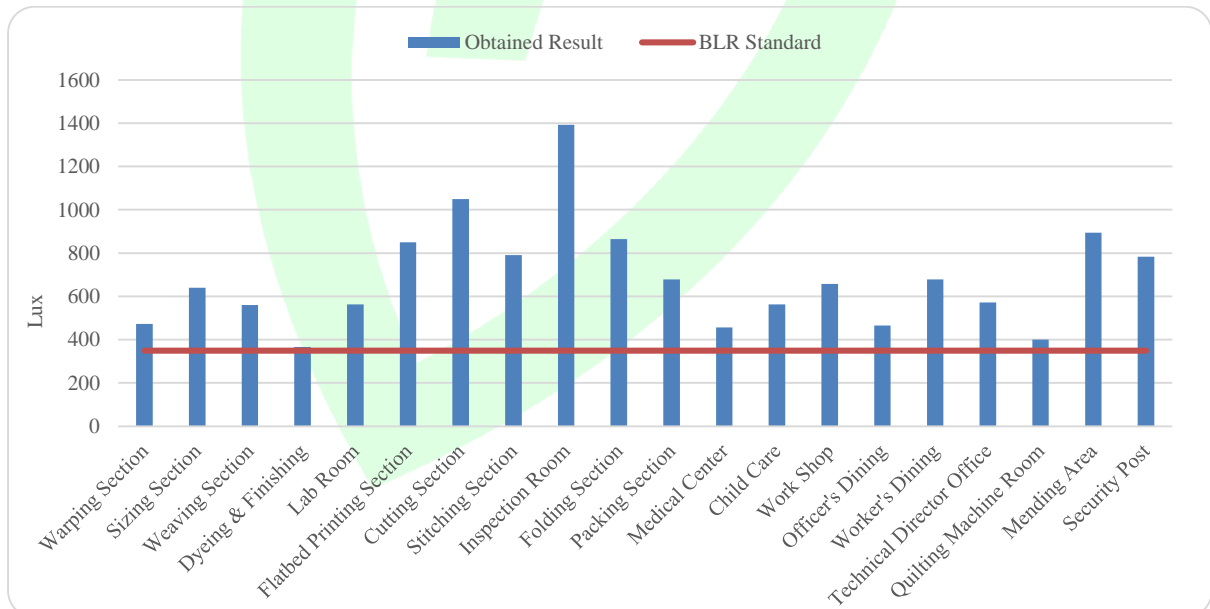


Figure: Indoor Light Level Monitoring Chart

Discussion and Recommendation:

ACS Textiles (Bangladesh) Ltd. & ACS Towel Limited has hired GREENBUD Testing & Inspection Services Private Ltd. to inspect the indoor light level of their factory. During inspection, it has been observed that, the factory uses both artificial and natural light sources. Light level in all the sections was found in compliance with the BLR standard.

However,

- ❖ For further development,
 - Number of light sources can be increased in some sections where light level found below or close to the standard
 - Distance between work station and light source should be reduced
 - Number of skylight system should be increased

ILO recommends the following measures to maintain efficient lighting in the work place-

- ✓ Lighting should be sufficient to enable people to work, use facilities and move from place to place safely and without experiencing eye strain.
- ✓ Choose appropriate visual backgrounds for walls, ceilings, etc.
- ✓ Find the best place for the light source to avoid glare, etc.
- ✓ Use the most appropriate lighting devices and fixtures.
- ✓ Reduce distance from light source to work station in order to meet the minimum requirement
- ✓ Ensure regular cleaning and maintenance of lights and windows.

Factory is suggested to assess the light level once annually at least if all other set ups are constant.



Engr. Syed Tashem Mahmood
CEO and Chief Environmental Engineer
GREENBUD
MIEB No.: M/35960
ISO 14001 certification Number.: EA/15/IN/16050
ISO 50001 certification Number.: ENMS/16/IN/533

APPENDIX



Figure: Indoor Light Level Monitoring

Instrument Description:

To keep the people safe in your working environment and deliver quality work you need to maintain a standard Light level in your working condition for whole time. This lighting level is needed to be maintained within legal limit also. GREENBUD Testing & Inspection Services Private Ltd is here to assist you to measure lighting level in your factory premises with high quality equipment & transparency. To assess this lighting level, we have to follow some standards, such as BLR, BNBC'2020 and STeP OEKO-TEX etc. GREENBUD Testing & Inspection Services Private Ltd use “Digital Lux Meter AS823” to measure light intensity level.



Technical Data

Measuring Range	1~100000Lux
Accuracy	±4 %
Unit Selection	Lux
Measure Level Selection	Auto/Manual
Repeatability	±2%
Sampling Frequency	2 time/sec
Resolution/Response Time	1 Lux/1s
Working Environment	0~40°C



CALIBRATION TECHNOLOGY PVT. LIMITED
Vivek Biponon Tower, Level-2
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Banglamotor, Dhaka-1000, Bangladesh.
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Accredited to ISO 9001:2015 & ISO/IEC 17025:2017



CERTIFICATE OF CALIBRATION

Certificate No. CTPL(23-24)-6179

Calibration Performed For :

GREENBUD
F14A,L14, Confidence Center(Building 2),Kha-09,
Shajadpur,Gulshan,Dhaka,Bangladesh
Phone : +880 1711084732
Mail Address : jesan@greenbudbd.com
Contact Person : SYEED JESAN MAHMOOD

Calibration Statics:

Received on : 06 Dec 2023
Date Serviced : 07 Dec 2023
Due on : 06 Dec 2024
Issued on : 07 Dec 2023
Received Condition : Good
Returned Condition : Good
Interval : 12 Months
Performed By : Md. Mahin Saruar Suton
Performed At : Caltech Laboratory
Environmental : Temp: 20.1 °C & RH% : 56.3
Conditions :
CalTech Procedure : CTPL-WI-155

Equipment Details :

Description : Digital Lux Meter
Manufacturer : Smart Sensor
Model No. : AS823
Serial No. : 5281512
Asset /ID No : GB-130-020-001
Range(Lux) : 0~200000
Readability : (0~19999):1 ,(20000~99999):10

Comments/Notes

Declaration of result as per ILAC-G8:2019 (Binary).
The result of calibration is satisfactory.
Any section marked,
N/P= Not Provided ,
N/S= Not Submitted,
N/A= Not Applicable
UUC= Unit Under Calibration.
Tolerance is taken from manufacturer specification.

CalTech hereby certifies that...

The above described instrument met or exceeded all established specifications at the time of calibration specified above; and the calibration results published in this certificate obtained using equipment capable of producing results that are traceable through NIST to the International System of Units (SI) or have been derived from accepted values, physical constants, by ratio or self calibration techniques. All Calibration activities performed are in compliance with **Comparison method** and **ISO 17025:2017** when specified as well as national/ international system guidelines. The quality system is ISO 9001:2015 certified. This report shall not be reproduced, except in full, without the written permission of CalTech.

All Calibrations, unless otherwise noted, are performed using accuracies of less than or equal to one quarter of the specification of the unit under calibration. The measurement uncertainties include a coverage factor of K=2, having a confidence level of 95%.

Calibration Points Result Column : P= Pass, F= Fail, A= Adjusted, D= No Result drawn due to tolerance N/S

Sl. No.	Description	Nominal (Lux)	As Found Corrected Avg. Std. value (Lux)	UUC Avg. Value (Lux)	Error (Lux)	Tolerance (±) %(Lux)	Result	Uncertainty (±) Lux
01	Illuminance	2000	1997	2000	3	5	P	4.8
02	Illuminance	5000	4989	5000	11	5	P	4.8
03	Illuminance	10000	9981	10000	19	5	P	4.8
04	Illuminance	20000	19972	20000	28	5	P	4.8
05	Illuminance	40000	39966	40000	34	5	P	4.8
06	Illuminance	50000	49960	50000	40	5	P	4.8



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CERTIFICATE OF CALIBRATION

Certificate No. CTPL(23-24)-6179

Standard Used to Calibrate Equipment

Sl. No.	Description	Manufacturer	Model	Serial	Calibrated from	Cal. Due on
01	Digital Lux Meter	CEM	DT-1308	170202399	AICL	10 Oct 2024

Calibration Performed By :
Calibration Engineer

Authorized By :
Laboratory Manager



[END]



ACCREDITATION CERTIFICATE

Issued under the authority of Bangladesh Accreditation Act, 2006
by Bangladesh Accreditation Board (BAB), Ministry of Industries to

GREENBUD Testing & Inspection Services
14A, Level-14, Building 2, Confidence center
Kha-09, Sahajadpur, Gulshan, Dhaka-1212, Bangladesh

This is to certify that this

Inspection Body(Type-A)


is accredited in accordance with the international standard

ISO/IEC 17020:2012

in respect of the associated scope, subject to the terms and
conditions governing the relevant conformity assessment
body (CAB) accreditation.

Certificate Number : 05.003.18
Accreditation Date : 28 June 2018
Date of Issuance : 18 Aug 2024 (2nd Renewal)
Date of Expiration : 27 June 2027



 18. 08.2024
Md. Anwarul Alam
Director General

This certificate must be returned on request; reproduction must follow BAB guidelines. For the specific
scopes to which this accreditation applies, please refer to the Directory of CABs at BAB website.